Social Use and Value of Trade Ceramics: an analysis of mortuary practices in Calatagan, southwest Luzon, the Philippines

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I, **Kuang-jen Chang**, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

The widespread distribution of high-fired glazed ceramics from China and Mainland Southeast Asia is one of the striking features of protohistoric Philippines as evidenced in the archaeological record They were not only an important indicator of inter-regional contact, but were also highly valued possessions in local societies, though their role is poorly understood. Thus, this thesis undertakes a theoretically-informed investigation of the social uses and value systems of imported trade ceramics vis-à-vis locally made earthenwares, from seven cemeteries in Calatagan, southwest Luzon, dating between the mid-15th and mid-16th centuries.

In previous studies, a key problem is the assumption of trade ceramics as only representing prestige goods, in which they are treated either as categorically distinct from local earthenwares or as an undifferentiated class of material objects. This study instead examines trade ceramics and earthenwares in terms of patterns of similarity and difference in their social uses. To do so, specifically, this research sets out to investigate particular hypothesised relationships between trade ceramics and earthenwares: quantity, association, location, gradation, and imitation, as well as variables such as age, physical treatment, body arrangement, variation between sites, and different burial types.

The results of quantitative analysis show that the use and value of trade ceramics are manipulated in more complicated ways. It is, therefore, reasonable to suggest that trade ceramics are not categorically distinct from earthenwares among late protohistoric Calatagan society. This thesis thus contributes to our understanding of the mortuary practice, as well as various social uses and values of trade ceramics in protohistoric lowland Philippine societies and of the changing nature of the interaction between local society and long distance maritime trade in Southeast Asia. At a theoretical level, this thesis also contributes to the general understandings of the social value of material culture amongst complex societies.

To my parents

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CHAPTER ONE
INTRODUCTION

The question of the relationship between intensified foreign exchange with developed states, especially China and India, and socio-political transformations in local society, has long been a fascinating subject for historians of pre-modern Southeast Asia (see Reid 1993: 6-11). The movement of high-fired glazed ceramics, or trade ceramics,[1] in the context of this research, is one of the striking features of early South China Sea activity, as evidenced in the archaeological record from the end of the first millennium CE onwards (see Guy 1986 for general survey). Specifically, since there is no tradition of high-fired and glazing techniques in the Philippines, all glazed stoneware and porcelain found in protohistoric[2] Philippines was brought in: first from China, then Vietnam, Thailand, Cambodia, Burma, Japan and, later, Korea. Thus, as a peripheral archipelago in Southeast Asia where pre-modern written records are scarce, trade ceramics are a persistent and pervasive indicator of inter-regional cultural contact for the ancient Philippines.

As a popular item on cargo lists, ceramics were exchanged for organic products and many other bartered commodities of Southeast Asia. Their importance in protohistoric Philippines is suggested by their widespread distribution (Fig. 1-1) (Beyer 1947; cf. Locsin and Locsin 1967). They were not only an important indicator of cultural contact, but also assumed a cultural significance transcending utility in Southeast Asian societies, and became highly precious possessions of wealth, status,

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[1] In this research, TRADE CERAMICS are roughly defined as the glazed stoneware and porcelain ceramics found outside their provenance. Whether or not they are really the result of "trade" activity is still arguable, depending on periods and areas where they were found.

[2] Following Bacus' (1999: note 1) argument, this term of "PROTOHISTORIC" is used here for the period of the 10th to 16th centuries in the Philippines archipelago.

ritual practice, etc.[3] However, interpretations of these inter-regional relationships, and the role that trade ceramics played within the network, have barely been investigated and are hotly disputed. A comparable phenomenon is the pottery distribution in the early Mediterranean world, as Susan Sherratt questions:

> ...was it really an important item of inter-regional exchange – or are we simply misled by its prominence in the surviving material remains? And if it was not an especially important item, why did it apparently move in such quantities?...To ask why it should have done so is to raise fundamental questions about the nature of ancient trade, and about the concepts of value which we apply to ancient artefacts and the motivations for their transfer between producers and consumers. (Sherratt, S. 1999: 163-4)

From the perspective of the social life/cultural biography of things (Appadurai 1986; Kopytoff 1986), a complete study of trade ceramics needs to be undertaken in relation to the whole process from production to consumption. This process comprises a system involving the flow of goods through time and space. However, because of the availability and accessibility of archaeological material,[4] this research focuses on the consumption sphere of the social life of trade ceramics, and asks why and how trade ceramics became desirable and accessible to protohistoric Philippine societies. Specifically, this study will only begin to reveal the usage pattern of trade ceramics in specific cultural contexts in local Philippine societies, i.e. how were trade ceramics treated, in what patterns and by what means were social values established within the mortuary context of protohistoric southwest Luzon societies? A key problem with many

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[3] For instance when Magellan first set foot on a small island near Leyte, natives gave them "three porcelain jars covered with leaves and full of rice wine" (Pigafetta 1903-6: 115). Later, when they were treated in Cebu, the local chief "had refreshments of many dishes, all made of meat and contained in porcelain platters, besides many jars of wine brought in" (ibid: 139). The chronicles of succeeding expeditions also left many references to ceramics, see Cole 1912: 3-7 for reference.

[4] Fujian and Guangdong of south China are well-known for their ceramics exported to Southeast Asia. Though there are plenty of brief reports for the kiln sites in these two provinces, systematic investigations and detailed reports are few.

previous studies is the assumption or limited investigation of trade ceramics only as representing prestige goods; they are treated either as categorically distinct from other objects, e.g. earthenwares, or as an undifferentiated group of grave goods. Thus, it raises the important question: Were trade ceramics a coherent type of prestige good superior in social value to local earthenwares? This research thus moves beyond simple dichotomies to investigate the diverse use of trade ceramics vis-à-vis local earthenwares, specifically in the mortuary context of seven cemeteries in Calatagan, southwest Luzon, which dates between the mid-15th and mid-16th centuries.

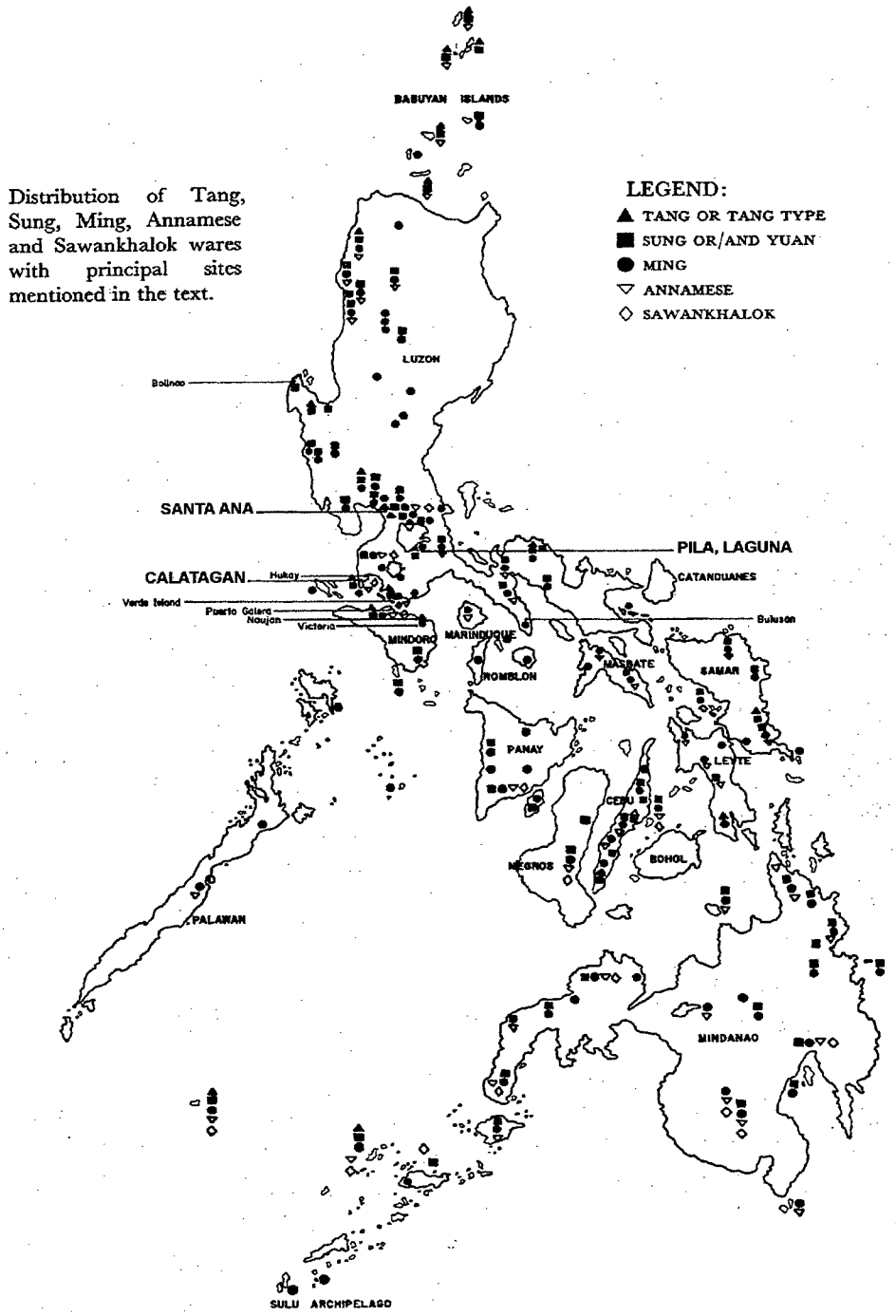

Figure 1-1 Distribution map of trade ceramics found in the Philippines as of 1960s (adapted from Locsin and Locsin 1967).

TRADE CERAMICS AND PHILIPPINE PROTOHISTORIC STUDY

For many centuries, mainland Asian trade ceramics have been found in ancient burial sites, and also among contemporary ethnic groups throughout the Philippine archipelago. The scientific studies, however, were conducted from the 1920s onwards. This section gives a review of this research history.

The first modern study of trade ceramics found in the Philippines was undertaken by the American scholar, C. E. Guthe. In 1922-24, the University of Michigan carried out research, headed by C. E. Guthe, in the central and southern Philippines. Guthe's team collected 4500 items of various materials from 542 locations, and covered most of the islands of Visayas, Mindanao, and the Sulu group (Guthe, 1927: 70). In terms of attribution, this collection contained hundreds of almost whole specimens of trade ceramics and many thousands of sherds. Guthe stated their initial observation for provenance and dating as follows:

> While most of it seems to be of Chinese origin, many vessels are obviously not Chinese, and their place of origin is, as yet, unknown. It seems probable that some of them came from Southern Asia, or possibly from India or the Malay Archipelago. Due to the great complexity of Asiatic wares it is impossible to say definitely just which are represented in the collections. This will have to be determined by specialists. It may, however, be safely said that some of the specimens closely resemble wares of the Sung dynasty (960 to 1279 A. D.). Later wares, of course, are more abundant. From the conditions of the specimens it appears that most of the materials is second grade, some of it practically equivalent to kiln rejects, which were brought to the islands by the Chinese traders in exchange for the products of the country. (Guthe 1927: 73)

In 1940, Olov R. T. Janse, a Swedish archaeologist under the sponsorship of Harvard-Yenching Institute, carried out excavations on three sites in the Calatagan Peninsula. His initial purpose was to fill the gaps in our understanding of early Ming ceramics; which is probably the least known of all later Chinese wares (Janse 1944: 35-7). His observations of hundreds of specimens of trade ceramics led him to a similar

conclusion as Guthe: trade ceramics found in the Philippines were almost all Chinese wares or "Chinese ware, imported from Siam, probably from the kilns of Sawankhalok, founded by Chinese ceramists in 1350" (Janse 1941: 259).

Moreover, as the pioneer in Philippine archaeology, H. O. Beyer's observations on trade ceramics were also relatively limited:

> All porcelain and stoneware fragments found in our sites can be grouped into three general classes as regards their probable origin. These are: (a) Chinese wares (constituting more than 90% of all); (b) Sawankhalok wares (manufactured in ancient Siam); and (c) an indeterminate class of which is still uncertain, although they undoubtedly come either from Indo-China or South China. (Beyer 1957: 19)

The reason why those pre-1960s scholars had only limited knowledge on trade ceramics is quite simple: there were few investigations of ceramic industries in South China and Mainland Southeast Asia before the mid-20th century.[5] Even though the Philippine Archipelago is a rich source of trade ceramics, those materials had to be referred back to their provenance. Based on such limited knowledge, early scholars tried their best to improve our understanding of the protohistoric Philippines. For instance, based on the geographical distribution of trade goods, Guthe (1927: 75) proposed a possible trade route back to as early as the 12th century which began at the southern tip of Luzon, through the Visayan islands, and then southwesterly along the western coast of Mindanao. On the other hand, the most famous case is Beyer's designation of "The Porcelain Age" (1947: 208) for the period between the 9th and 16th centuries CE:

> All archaeological sites or horizons which contain fragments of vitrified stoneware or porcelain are classified by me under the heading 'Porcelain Age'. ...The Porcelain Age is therefore proto-

[5] For example, in Jingdezhen, and other kilns in Jiangxi and Zhejiang provinces in south China, which produced high quality porcelain especially for the use of the Imperial Court, we have more historical information about their products and industry. There is very little data about the ceramic industry in Fujian and Guangdong provinces, which are now known as the largest industry centres for export.

> historical because it comes within the period of which we have written records – Chinese, Indian, and Arabian (Beyer 1957: 11).

As a unique term, Beyer's "Porcelain Age" fits his diffusionist model of Philippine prehistory (Beyer 1948a, b; Beyer and de Veyra 1947), which is best known as his "Wave Migration Theory" (see Beyer 1948b).

Since the 1950s, the knowledge of trade ceramics has improved and although it was a slow process, finally became known outside of China.[6] The first attempt to identify the possible provenance of trade ceramics was done by Michael Sullivan, and he is probably also the first to point out the existence of non-royal local wares found in the Philippines. He suggested that:

> While some are Lung-chuan pieces of high quality, the majority are clearly provincial types. Indeed, much of the pottery and porcelain found in the Philippines, particularly of the earlier periods, appears to be the product of local kilns in Kwangtung and Fukien, such as have been investigated by Lin Hui-hsiang of Amoy University and the late Malcolm Farley....
> From Ming times onwards...The blue and white wares alone, which comprise the majority, range from the finest Ching-te-chen porcelain made for the home market, to the coarse and vigorously-decorated so-called Swatow wares. (Sullivan 1956: 76-7)

A similar observation was also made by J. M. Addis in a lecture read at a meeting of the Oriental Ceramic Society in London in 1968:

> First, as regards *provenance*, I think that no Chinese ceramics have been found in the Philippines that came from any kiln in North China, and that all the Chinese material comes from kilns in Kiangsi, Chekiang, Fukien, Hunan and Kwangtung. Types that may appear at first sight to be claimants for a Northern provenance can on closer examination be disqualified....and pieces of any known Northern Celadon type, particularly in body and the treatment of the foot, and should probably be attributed to some as yet unidentified kiln or kilns in South China.

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[6] For example, Lin, Hui-hsiang of Amoy University, Fujian, China, already pointed out in 1930s that Fujian and other South China provinces might be the origin of most trade ceramics found in Southeast Asia. Unfortunately he did not publish any papers on this topic. However, he helped many scholars toward such study.

> As regard *dating*, I think that no Chinese ceramics have been found in the Philippines which are earlier than Sung. We know that the South China overseas trade was interrupted for over a century by the disturbances that brought down the T'ang dynasty and was only resumed after the establishment of the Sung, at the end of the tenth century, with Canton and Chuan-chou as the chief ports. (Addis 1970: 19)

Addis' summary reflected the achievements and limitations of the studies of Chinese ceramics found in the Philippines up to that date. In 1968, an international conference was held in Manila. Although most papers presented data only on selected Chinese trade ceramics found in the Philippines, participants (see Abaya 1968; Addis 1968a,b,c; Locsin, C. 1968a,b,c) agreed on two conclusions: 1) most of those previously diagnosed as Tang wares are actually attributable to later periods manufactured in some South China kilns, which continued the so-called Tang-like tradition; and 2) provinces in South China are possibly the main sources of trade ceramics found in the Philippines.

The advance of knowledge on trade ceramics also benefited from fieldwork which took place in the Phillipines during this period, such as in Calatagan by Fox, late 1950s - early 1960s; in Santa Ana, Manila by Locsin, early 1960s; and in Pila, Laguna by Tenazas, mid-1960s.

Beginning in 1958, Robert B. Fox and his team from the National Museum of the Philippines carried out systematic excavation in the Calatagan Peninsula, Southwest Luzon. Their work is seen as a milestone in Philippine archaeology. It is not only the first detailed fieldwork for the Philippine protohistoric assemblage based on controlled excavation, but also generated a great interest in trade ceramics amongst the public. This both benefited and damaged the pre-Spanish heritage in the archipelago (see following discussion, also Evangelista 1989: 17).

After Fox's work in Calatagan, the Locsin family carried out the first large scale excavation at Santa Ana, Metro Manila, during 1961-62. Despite their work not being supervised by trained archaeologists, their meticulous observations and records are still of value (Locsin and Locsin 1967). This is especially so in regard to their comprehensive classification of trade ceramics found in Santa Ana and at many other sites. The Locsin family also supported Mrs Rosa Tenazas to undertake a controlled excavation in Pila, Laguna in 1967. The finds, which totalled 241 graves and more than 1200 pieces of trade ceramics, were similar to the collection from Santa Ana (Tenazas 1968). However, this site is of further importance because of its stratification, which showed possible changes in the types of imported ceramics and their social uses.

Large scale excavation for trade ceramics ceased after the 1970, and focus moved to underwater shipwreck discovery from the late 1980s onwards (Dizon 1994 and 2003; Ronquillo 2001). During the 1970s, Butuan in northern Mindanao became the scene of furious looting and later archaeological excavations for trade ceramics (Evangelista and Peralta 1979; Ronquillo 1987). Although limited archaeological evidence was acquired due to this illegal destruction by pothunters, the Butuan site provides important chronological data, probably up to the 11th century, and is connected to the Guangdong kilns (Brown, R. 1989).

As the study of ceramic and ancient kilns in China continues to develop, it is possible to correlate the trade ceramics found in the Philippines to specific kilns in South China, especially in Fujian and Guangdong. For example, Cembrano (1989) suggested that, based on comparisons with material from the Guangdong kilns, a rather high percentage of trade ceramics found in Butuan, Mindanao is attributable to Guangdong. As well as this, discovery by underwater archaeology opened a significant

window to pursue this connection; tracing ceramic circulation from South China to many Southeast Asian sites (Brown, R. 2004; Dizon 2003).

Therefore, answers to problems of provenance and dating of Chinese trade ceramics found in the Philippines, have become increasingly clearer as new data becomes available. More systematic analysis and detailed reports from the sources of these materials should be forthcoming in the near future.

Further, the advance of knowledge on trade ceramics has also improved scholarly understanding of Philippine protohistory. Among them, Robert Fox's modification of Beyer's "Porcelain Age" was the most important case. In Fox's view:

> ...Porcelain do not create 'age'; rather the period was one of increasing contacts and formal trade with the Great Traditions of Asia...during which many ideological and technological influences, not simply porcelains, reached the Archipelago.
> ...the type of archaeology which is based upon collecting not upon systematic excavations, as well as the ability of the vitrified and relatively indestructible trade pottery to survive when other artifacts and evidences have disappeared. (Fox 1967: 51)

Fox was also first to discuss systematically the relationship between China and the pre-Hispanic Philippines through time. He based his findings mainly on trade ceramic evidence, and divided their relationships into three stages, according to Chinese dynasties: Tang, Song, and Yuan/early Ming (Fox 1967: 51-60). Fox's observation on trade ceramics and foreign trade is summarized in Table 1-1. Fox's model properly represented the cultural historical or art historical tradition, which had the least difficulty in seeing these exotic ceramics as normal items of trade, especially prestigious and conspicuous objects. It is also popular, especially among art historians of trade ceramics, to use the term "sinolization" to refer to the conspicuous consumption of trade ceramics in the Philippines, but without detailed consideration of consumption

behaviour. This view placed the pre-Hispanic Philippines in a dependent position to the maritime trade network, in which China was a hegemonic power.

Table 1-1 Fox's model of the trade relations between the Philippines and China, in terms of trade goods (source: Fox 1969).

Trade ceramics also played a key role in the evolutionist-orientated approach for Philippine protohistory, which was further developed by K. Hutterer (Hutterer 1973, 1974, 1977, 1979). Hutterer is the first anthropologist who systematically discussed the problem of long distance maritime trade in the Philippines and its relationship to social change. In his argument, the abundance of trade ceramics is evidence of intensified trade activity which impinged on the Philippine archipelago; and thus they stand out from all the other types of archaeological assemblages dating from the last five hundred years before Spanish conquest. Such inter-regional trade was connected to three areas of change in Philippine lowland societies (ibid 1974: 295-7; 1977: 179-81): settlement pattern, economic system, and social organisation.

In regard to the first area, settlement pattern, it appears that the development of inter-regional trade was correlated with the growth of larger, nucleated settlements in the coastal Philippine Archipelago (Hutterer 1974: 295-6). Hutterer saw this

development as the result of certain "positive feedback", and suggested that the growth of coastal settlements was partly the result of population movements from the interior areas. The development of inter-regional trade had an influence on the economic systems, which changed the articulation between different Philippine societies, especially the local exchange with interior island populations (Hutterer 1977: 180). Thus, coastal societies had to exchange their manufactured goods or the exotic goods from abroad with the interior populations. Hutterer also observed that there was strong evidence of manufacturing industries (e.g. metal implements and native pottery) located in the coastal societies. The development of inter-regional trade also appeared to be linked to developing social rank within coastal societies (Hutterer 1974: 297). According to Spanish ethnohistoric accounts and modern ethnographic analogy, the political leaders were those who were able to control the goods and services through deft manipulation of commercial and personal relationships.

Hutterer's work was further developed by his students in the University of Michigan. For example, Laura Junker's research (1990a, b) succeeded Hutterer's fieldwork in the Bais region, and paid more attention to the topic of settlement patterns. Junker's conclusion (1990a: 894; 1990b: 203) on the relationship between foreign trade and social change emphasised both the indigenous roots towards increasing social complexity (ibid 1990a: 894) and the influence of foreign trade, placing the Philippines within a type of "world system" model (Junker 1996: 405-6).

Trade ceramics were key evidence in Junker's model on the emerging complexity of protohistoric Philippine societies, as reflected in the changing patterns of household wealth, mortuary differentiation, and lowland-upland exchange systems

(Junker 1999a: 144-80, 221-60). For instance, she argued that there existed a prestige goods hierarchy which could have represented status-related mortuary practices:

> Rare types of porcelain or other relatively unique foreign commodities, common foreign porcelain types, and locally made luxury goods such as decorated earthenwares appear to form prestige goods hierarchies, with both the quantity and the quality of burial goods marking the status of individuals within a complex and multi-tiered system of social ranking. (Junker 1999a: 171)

In summary, trade ceramics played the key role in scholars' interpretations of either "diffusionist" or "evolutionist" Philippine protohistory. The "diffusionist/art historian" approach paid more attention to the questions of chronology and provenance of trade ceramics, which they essentially saw as art luxuries. Increasing contact and economic interaction with the foreign world is evidenced from the widely-distributed trade ceramics, which resulted in many ideological and technological influences from the "Great Traditions of Asia" arriving in this peripheral archipelago. However, speaking generally, except for a few brief and superficial discussions, there are only a handful of sophisticated investigations of how such external factors influenced Philippine societies. Furthermore, there are no clear pictures of how and when social changes occurred, nor, for example, whether exotic goods influenced protohistoric Philippines or created any new style in their culture. The "evolutionist/cultural anthropologist" approach emphasizes internal factors, such as population growth or ecological changes, to explain Philippine prehistory. Archaeologists who took this approach, investigated many spheres of social change in local societies, and worked out a much clearer historic picture for this subject. However, the dynamic process of long distance maritime trade is seen as an external factor, which is still not well-demonstrated.

RESEARCH APPROACH AND STRUCTURE OF CHAPTERS

The preceding section discussed scholarly interpretations of trade ceramics in Philippine archaeology. In both "diffusionist" and "evolutionist" approaches, there is one shared key assumption: trade ceramics were prestige goods. However, they did not investigate the effect of trade roles in protohistoric Philippine society. Archaeologists and art historians studying Philippine archaeology and trade ceramics have often, quite reasonably, assumed trade ceramics, i.e. grave goods accompanying a rich burial, as prestige goods. The precise grounds, however, for such an assumption have never been systematically investigated. A detailed analysis of trade ceramics within the mortuary context in question has been lacking. Given the condition of archaeological material available, this research paper thus sets the essential questions as: *Were trade ceramics a coherent type of prestige good superior in social to local earthenwares within mortuary context of protohistoric southwest Luzon?*

Given the focus of this research, Chapter Two first looks at the concept of value and the value representation of material things; and, second, discusses archaeological mortuary study. Based on the presumption that trade ceramics were a type of prestige good superior in social status compared to local earthenwares, this research sets out to investigate particular hypothesised relationships between trade ceramics and earthenwares: quantity, association, location, gradation, and imitation, as well as variables such as age, physical treatment (tooth-filing), body arrangement (head orientation), variation between sites, and different burial types (headless burial).

For a better understanding of the archaeological materials analysed in this study, Chapter Three presents a historical picture of society and culture in the protohistoric Tagalog people of southwest Luzon. Chapter Three will first give a general background

of geographical features, and its niche in long-term maritime trade of the South China Sea. It will then focus on particular important issues such as: social structure, economic activities, and cultural perspectives of belief, death, and mortuary practice, as well as the material culture of trade ceramics and earthenwares.

Chapter Four will present the archaeological evidence from seven sites in the Calatagan Peninsula, Southwest Luzon, which forms the dataset for the analysis of the social uses and social values of trade ceramics in mortuary contexts. Approximately 1100 interments, with more than 2400 grave goods, are included in this study. The content and assemblage of grave goods indicate they all belong to the same period: mid-14th to early 16th century AD. All pieces were excavated during the late 1950s and 1960s. Data and collections from these sites still constitute the largest assemblage of trade ceramics which archaeologists can access and analyse today, and thus provide us with the most important information on trade ceramics for the whole Philippine Archipelago.

Chapter Five investigates the use patterns of trade ceramics and earthenwares, specifically through examining five hypothesised relationships between trade ceramics and earthenwares in regard to quantity, association, location, gradation, and imitation; as well as other social variables including age, tooth-filing, orientation, site, and uncommon burial. The analyses are conducted on two sets of data, burials and pottery vessels, respectively: a) the relationship of quantity and association considers the distribution of burials with different frequencies of pottery vessels; and b) the relationships of location and gradation apply to the spatial arrangement of various types of pottery vessels across specific body positions.

Chapter Six discusses the important issues raised from the analyses in Chapter Five, including discussing if it is appropriate to compare trade ceramics and earthenwares under one value system of grave goods. Are there, in fact, two contexts, trade ceramics and earthenwares, respectively, which are dominant? Chapter Six also investigates the possibility of whether the people in Calatagan had their own preferences for trade ceramics which could be represented through physical properties of objects. It is also important to know whether the value of trade ceramics changed, or even decreased, over time and space. Finally, it will show that our understanding of late protohistoric Calatagan could be improved when the data is considered within the context of maritime Southeast Asia ca. 1500 CE.

Chapter Seven, the concluding chapter, summarizes the entire research, and points out its contribution to the study of trade ceramics in Southeast Asia in regard to our understanding of protohistoric Philippine society and culture; it also points to the archaeological study of the value of objects. Finally, it will propose directions for further research.

CHAPTER TWO
THEORY AND METHOD: SOCIAL USE AND VALUE OF GRAVE GOODS IN MORTUARY CONTEXT

Two questions raised in the introductory chapter can be summarized as: How did imported goods acquire social value in local society? Why were mortuary practices the venues where imports became prestige grave goods? With particular reference to trade ceramics, a key problem with many previous studies is that they have been assumed and/or only been investigated in terms of representing prestige goods. They are treated either as categorically distinct from earthenwares or as an undifferentiated group of material. To answer these questions, it is essential to take a theoretical view, as well as analytical method, on value creation and mortuary practice. This chapter first highlights the concept of value and the value representation of material things. The gradation nature of value has intriguing potential for the investigation of how the social value of imports is created within a local society which adopts and uses foreign products. The second section then investigates how the value of imports is created within the local cultural universe, i.e. mortuary objects compared with similar local objects. Finally, the third section proposes a set of archaeological strategies for identifying variation in the social uses and gradations of the values of objects.

THE STUDY OF VALUE

This section looks at some important issues related to the key concept of value and the process of value creation. It first asks how value is assigned to a material object. Then it discusses different definitions of value and their determination of how value is created in which the full articulation of value creation is involved: production, circulation, and consumption. In short, therefore, this study emphasises that value is a form of social commitment of human consciousness in order to clarify the reproduction

relationships of things and people, which is only effective in a specific socio-cultural setting, and operates in a comparative process in which people judge objects by referring to a value system.

The concept of value and its creation

In recent years, the concept of value has been raised in the archaeological literature (e.g. Bailey 1998; Orser 1992; Renfrew 1986; Sherratt, S. 1999; Thompson 1979; van Wijngaarden 1999a, b; Voutsaki 1993, 1995, 1997). It has also been heavily debated in social anthropology for decades (e.g. Appadurai 1986; Douglas and Isherwood 1996; Dumont 1980; Graeber 2001; Gregory 1997; Leach and Leach 1983; Mauss 1990; Munn 1986; Myers 2001; Sahlins 1972). Among various arguments, one key question is: how is value assigned to material objects? A survey of this question, by examining the full range of political economy from production to consumption, will reveal numerous concepts of value, how value is created, and how a value system is reproduced.

Production

Contemporary anthropological debate on the concept of value can be traced to Marx's view of the labour-cost theory of value; to his seminal definition of exchange value as embodied labour. According to Marx, value is defined as embodied labour at the moment of production:

> ...when commodities are in the relation of exchange, their exchange-value manifests itself as something totally independent of their use-value. But if we abstract from their use-value, there remains their value, as it has just been defined. The common factor in the exchange relation, or in the exchange-value of the commodity, is therefore its value.
>
> A use-value, or useful article, therefore, has value only because abstract human labour is objectified or materialized in it. How, then, is the magnitude of this value to be measured? By means of the quantity of the 'value-forming substance', the labour, contained in the article. This

> quantity is measured by its duration, and the labour-time is itself measured on the particular scale of hours, days etc. (Marx 1976: 128-9)

This was an especially classical concept of value which fitted well into 19th century industrialized Europe. In the archaeological study of mortuary practices, the connection between value and labour has also attracted much attention. One view is the "energy expenditure model" (e.g. Binford 1971: 21; Tainter 1975; 1977). It treats labour input as an observable and straightforward category which can be equated with value, that is to say:

> Energy expenditure should in turn be reflected in such features of burial as size and elaborateness of the interment facility, method of handling and disposal of the corpse, and the nature of grave associations. It is anticipated then that the amount of energy expended in mortuary ceremonialism is the key archaeological feature reflecting variations in prehistoric rank structure. (Tainter 1975: 2)

Later studies of value (Carr 1995) have shown that labour as the only measure of value is limited. As Firth (1970: 21) pointed out, "...it must be made clear that labour – or labour-time – as a measure of cost is very different from labour or labour-time as a measure of value." On the other hand, modern definitions see value as not fixed at the moment of production, but as being created through the full range of value manipulation, including circulation and consumption (Miller 1995; Shank and Tilley 1987: 10-13; Voutsaki 1995; 1997).

Circulation

Economic anthropological studies have clearly revealed that the circulation of material things, no matter whether in the form of gift or commodity exchange, also involved the process of value creation. Gift exchange, such as the *Kula* in the Trobriand Islands (Leach and Leach 1983; Malinowski 1920; 1922; Mauss 1990; Munn 1983;

1986; Weiner 1992), provides an example of how value is created by and in the process of circulation.

According to Campbell (1983), for example, the shell ornaments in *Kula* are evaluated through complex criteria. They not only take into account intrinsic properties, such as size, colour, shape, and labour expenditure for production, but also the specific history of each item; that is, each *Kula* object has its own "personality" (name) and "past" (legend of movement). Thus, the value of an individual *Kula* object is accumulated through and defined by its circulation in the *Kula* ring.

The question is, though, how is value assigned to objects through circulation? In his influential study of gift exchange, Mauss (1990: 3) repeatedly stressed that, "...exchanges and contracts take place in the form of presents; in theory these are voluntary, in reality they are given and reciprocated obligatorily". That is, gift exchange creates obligation, which is only cancelled when the return is made. According to Gregory's short but sophisticated definition: "...gift exchange is an exchange of inalienable objects between people who are in a state of reciprocal dependence that establishes a qualitative relationship between the subjects transacting" (Gregory 1983: 104). In other words, items as gifts have an exchange-order, not an exchange-ratio of commodities, within the gift exchange. For instance, in terms of Gregory's example (ibid: 107-9), a gift exchange equation should be read as "A owes B a canoe and B owes A three baskets of yams" (an inalienable conversion), but not "the price of yams is one-third the price of a canoe" (an alienable conversion). Thus, the question of the exchange-order of items should be transformed as "given the exchange-order of objects, what determines the rank of the transactors?" (ibid: 110). Importance is thereby derived from "the status of the transactors and the fame accruing to them by means of the

transaction as a condensation of past performances and future expectations" (Voutsaki 1997: 37). In short, value is created through the gift exchange in which a qualitative relationship between the subjects is established, and debt is created.

Thus, gift exchange is mutually defined as a social relationship between transactors, as well as the exchange-order of the objects. According to Munn (1983: 283), in the case of the *Kula*, "Men appear as the agents defining shell value, but without shells men cannot define their value. In this respect, shells and men are reciprocally agents of each other's value definition."

Consumption

Consumption, though being more difficult to define and pin down, is nevertheless one of the most important topics in anthropology (Miller 1995: 141). The most welcome advance is the shift from the discussion of utility and the need to treat consumption as a "ritual process," and the idea of material things being "good to think" (Douglas and Isherwood 1996).

Recognition of the importance of consumption in social study can, at least, be traced back to the seminal works of Werner Sombart (1967) and Thorstein Veblen (1925). The importance of Sombart's work is his historical insight into the relationship between the demand for luxury and the emergence of modern capitalism. According to Sombart, the principal cause of the expansion of trade and industry in Europe between 1300 and 1800 was the demand for luxury goods; that is, consumption rather than the production of the Marxian and Weberian approach (see Appadurai 1986: 36-40; Sherratt, A. 1993). The importance of his model to the study of value, is his complicated argument on the cultural basis of demanding luxury goods; as well as a complex social

mechanism mediating commodity circulation between short-term and long-term patterns (Appadurai 1986: 40-1).

We owe Veblen for a sophisticated analysis of conspicuous consumption in the Victorian period. Veblen's key question could be expressed as follows: what is the basis of social status and how can one acquire social prestige? He gave a simple, if somewhat cynical, answer: wealth and demonstration. In Veblen's analysis, it is the possession of wealth rather than money alone which grants people social status. Moreover, one must demonstrate one is wealthy in order to attain social prestige. Thinking of an opposing example to Veblen's viewpoint, we react negatively to a miser because the miser fails to demonstrate wealth properly. Thus the issue becomes the ways in which to demonstrate wealth appropriately. Veblen identified two main ways: conspicuous leisure, and conspicuous consumption.

Archaeology is often seen as 'the study of garbage'; that is, in the eyes of the public, the result of consumption behaviour. A confusing fact is that consumption behaviour is seldom considered to be a significant practice requiring particular explanations, but rather as frozen evidence from which production and circulation of material things can be read. For example, Kristiansen (1978) saw the amount of deposited consumed wealth as a direct reflection of the purchasing power or productivity of each area. Thus, the changing patterns of wealth depositions were explained by the fluctuations of supply or productivity shifting through technological innovation.

The disadvantage of such a bias, seeing consumption as a simple reflection of production and circulation, is the absence of purposeful practice in the discourse, such as the formalized deposition of wealth. Bradley (1982) had already noticed that purely

economic explanations of wealth deposition ignored the ritual and dramatic character, and the social function of the conspicuous consumption practice, e.g., the transformation of economic wealth into symbolic capital such as fame, prestige, and power.

The mutual nature of value

As discussed above, the value of objects is neither inherent nor frozen at the moment of production; rather, it is created throughout the full range of the social life of things. Moreover, contemporary social theory reveals that, beyond the pure economic aspect, the mutual nature of value comprehension is based more in the general human experience of social practices. This argument comes from two lines of social theories. On the one hand, the French school of *L'Année sociologique*, especially the work of Marcel Mauss (1990), asserts the importance of social relationships in material cultural study. As Mary Douglas (1996: xxxi) points out: "the social relation of men provides the prototype for the logical relations between things, then, whenever this prototype falls into a common pattern, there should be something common to be discerned in the system of symbols it uses."

On the other hand, one school of German sociology also explores the social nature of economic value. Georg Simmel's seminal work (1978) provides a systematic account of how value is best defined and, especially, how the development of human consciousness is essential to the value creation of material things. According to Simmel, "Value exists in our consciousness as a fact that can no more be altered than can reality itself. ...value is never a 'quality' of the objects, but a judgment upon them which remains inherent in the subject" (ibid: 63). Or we can say that economic value is actually the "objectification of subjective values" (ibid: 65). Thus, when we discuss the

creation of value, we cannot avoid the subject of the formation of human consciousness. But, how is such consciousness formed and value created? In Simmel's analysis, such consciousness is formed from a psychological "gap", or a "tension", between our desire for objects and our accessibility to them:

> In desiring what we do not yet own or enjoy, we place the content of our desire outside ourselves. ...The content of our desire becomes an object as soon as it is opposed to us, not only in the sense of being impervious to us, but also in terms of its distance as something not-yet-enjoyed, the subjective aspect of this condition being desire. ...the possibility of desire is the possibility of the objects of desire. The object thus formed, which is characterized by its separation from the subject, who at the same time establishes it and seeks to overcome it by his desire, is for us a value. (Simmel 1978: 66)

Therefore, from Simmel's point of view, an object is not valuable because it is difficult to acquire. We name those objects valuable that stem from our desire to possess them: "Since the desire encounters resistance and frustration, the objects gain a significance that would never have been attributed to them by an unchecked will" (Simmel 1978: 67).

Simmel's argument pushes the value theory of material things beyond the pure economic aspect into a more general human experience of social practices. Similar approaches toward value study can be found in recent anthropological studies (Gregory 1997; Munn 1983, 1986; Thomas, N. 1991; Weiner 1992). Munn, in her sophisticated analysis of *Kula* activity, for example, defined not only value in the local context, but also the value of the action system (Munn 1983: 283). In the case of *Kula*, the symbolic interchange of qualities between humans and things constructs the essence of the simultaneous creation of value and prestige. However, there is a critical difference between shells and humans in their function as agents of value definition: shells are

"classified into explicit categories of relative worth, based on the possession of certain 'qualisigns' of value" (ibid: 284).

Based on this survey of three spheres correlated to the value creation of material things, this research takes C. A. Gregory's synthetic and humanist approach toward value theory, which justifies a lengthy quotation as a useful start:

> Values are those invisible chains that link relations between things to relations between people. They are invisible in the sense that they are, first and foremost, forms of human consciousness that describe what is and prescribe what should be. As descriptions they clarify the relations between the reproduction of things and people in specific historical, geographical and social settings; as prescriptions they guide the actions taken to transform a found chaos into a desired order, or, what amounts to much the same thing, to reform an existing state. For a value system to operate effectively there must be a generally accepted standard of value because valuation is essentially a comparative process by which two unlike entities – be they commodities in the market, gifts in the *Kula* ring, or castes in India – are compared and judged to be the same or different with reference to this standard. Standards of value are generally accepted but never universally so. This is because people are endowed with a potential, not always realised, to question the reasonableness of authoritative judgements. For the humanist, the essence of the value creation process is human consciousness. This refers to the reciprocally recognised relations between people in concrete historical, geographical, and anthropological settings. Human valuers are the means by which values exist. Material objects of use to people, such as land, rice, rupees, dollars, cowries, silver, and gold, are transformed into marked social forms such as gift, commodities, and goods, and the process through which they acquire these values are institutions such as the Market, the House, and the State. (Gregory 1997: 12-3)

According to Gregory's definition, there are at least four important propositions that we need to highlight when we consider the concept of value:

1) Values are forms of human consciousness, not inherent properties of objects. The essence of the value creation process is the reciprocally recognized relationships between people.

2) Values are used to clarify the reproduction relations of things and people, as well as to guide the actions taken to create a desired order.

3) A value system is only effective in specific historical, geographical and social settings. It is generally accepted in certain situations but is never universally qualified.

4) Valuation is essentially a comparative process in which people compare and judge objects with reference to a value system.

Gradations of values

The foregoing sections on the nature of value reveal that one significant feature of valuable objects is the "...symbolic links between different objects established via gradations of values" (Lesure 1999: 27). Differentiation and grading are creative actions in social evaluation. Objects are categorised and classified, which has implications for the creation of a value system. Gradations of values embody differences in value and order, and thus come to mark relative social worth. A value gradient represents a form of ranking, a symbolic activity which imposes order on a specific set of criteria. People make judgements by imposing order, and create a limited set of categories which constitute priorities among objects. Once these priorities are established, they become the basis for action: motivating people to enter into relationships and to choose among alternatives. Objects at different registers in a value system can be organized in different ways and maintain various roles in social reproduction. The social use of an object takes place within a framework structured by the existence of comparable items of different value used in different ways. These gradations of value differentiate objects of similar material, form and/or composition. Thus, when such a value system appears, the strategic use of an item is dependent upon its point in the gradation of value. In the following, some ethnographic cases will be discussed to explain how such a gradation of value exists and operates in social life.

A classical example of the gradations of value is the shell valuables in the *Kula* exchange. Malinowski (1922: 199) noticed that there existed classes of necklaces, although he did not list the class names. A well-illustrated case study of shell valuables in the *Kula* exchange has been explored by Campbell (1983). In her analysis, Campbell observed that properties such as size, colour, history and other personal characteristics, rather than the productive labour time embodied within them, are the important determinants of the exchange hierarchy of shell valuables.

Gould (1966) investigated Tolowa Amerindians of northwest California and revealed that they made significant distinctions among shell beads by length. The Tolowa used a binary system in classifying the shell beads. Long beads were seen as extremely valuable, while short beads were regarded of little value. Long shells of similar length were linked to form a string of ten beads. The Tolowa then established the value by means of these ten beads set against an adjustable length of string. Strings of longer shell beads were used as social payments such as bridewealth, or compensation for deaths, or payments to shamans. Strings of the shorter beads were not part of social payments, and were used primarily for display within peer interactions.

Burton's (1989) examination of hard stone axes, which were widely exchanged in the Papua New Guinea Highlands, reveals such a gradation of value as well. His study showed that axes 10-20cm long were for utilitarian purposes, while ones 20-30cm long were treated as valuables and only exchanged in specific situations, such as bridewealth. Also in regard to Papua New Guinea, Foster (1990) gives us a similar case of the Tanga people who lived on Boang Island. The shell discs, made from the valves of giant clams, were important items used in exchange for cooked pigs. Medium-sized shell discs circulated as standard exchange tokens in marriage and mortuary transactions.

However, the largest variety of shell discs was never circulated but, instead, they were kept as lineage heirlooms and only displayed on rare ceremonial occasions.

As we can see from ethnographic studies, items of similar material or form or size are often differentiated in social value and used in various social contexts; thus establishing a gradation of value. The concept of a gradation of value thereby provides some practical advantages for archaeological study. It gives archaeologists a way to break down the rigidity of the categories of objects, and to organize the complexities introduced by discriminating objects according to social relationships and political economy. As Lesure pointed out:

> Gradations are a fertile framework for metaphoric elaboration because they simultaneously assert both similarity and difference. Gradations of values provide a structure within which objects used in one context reference objects deployed in other contexts and call implicitly for comparison and evaluation. (Lesure 1999: 28)

As discussed in Chapter One, a key question in understanding the social value of trade ceramics in the Philippines is that they are often assumed to be and/or investigated in terms of representing prestige goods which were superior in status to local earthenwares. However, this type of superiority is based on hypothesized relationships-of-use patterns, which have been scarcely investigated and are vigorously disputed. This research proposes working models to evaluate a set of hypothesized relationships. Before doing so, I will consider the importance of mortuary practices in understanding the value of trade ceramics.

ARCHAEOLOGICAL STUDY OF MORTUARY PRACTICE AND GRAVE GOODS

As clarified in preceding sections, a value system is only effective in a specific social setting. Thus, it is important for this research to investigate, in terms of archaeological theory, how the value system of grave goods is realized in the setting of mortuary practice, especially how the imported objects were embedded into the local value system.

Grave goods as cultural/ethnic indicator in cultural-history archaeology

Before the expansion and shifting focus of archaeological studies in the 1960s, the "culture-historical" explanation had, mainly, an idealistic view of mortuary practices as an expression of primitive religion, and/or as symptoms of cultural diffusion, linking a specific burial pattern with specific ethnic groups. In terms of archaeological evidence, geographically and temporally restricted assemblages were normally defined as cultures, and their identifications were often seen as the remains of ethnic groups (Trigger 1989: 161-3). Among a multiplicity of evidence, mortuary remains are one of the most powerful; and grave goods, especially, are seen as indicators of cultural/ethnic groups. For example, Gordon Childe thought that grave goods, along with pottery and ornaments, "tended to reflect local tastes and were relatively resistant to change; hence they were useful for identifying ethnic groups" (ibid: 171). On the other hand, of course, grave goods were often seen as symbols of wealth, and different distributions among burials were seen to reflect personal wealth or social status. However, in processual archaeology's approach grave goods are further systematically studied as an index of social status to identify the level of social complexity.

Grave goods as index of social complexity in processual archaeology

The contribution of the processual approach in the 1960s and 1970s was to suggest that mortuary evidence should be analyzed within the socio-cultural system, and that burial data can be interpreted as evidence of social complexity and degrees of status differentiation. The long-standing interest of archaeologists in mortuary variability stems from the presumption that there exists important links between forms of mortuary treatment and the structure of social status. As Binford clearly pointed out:

> ...other things being equal, the heterogeneity in mortuary practices which is characteristic of a single sociocultural unit would vary directly with the complexity of the status hierarchy, as well as with the complexity of the overall organization of society with regard to membership units and other forms of sodalities. (Binford 1971: 14-5)

As one of the most important developments of mortuary study in the 1970s, Binford's proposition attracted archaeologists to employ ethnographic data on mortuary practices for exploring cross-cultural, middle-range generalizations. Saxe's decisive work (1970; see also 1971) proposed eight cross-cultural hypotheses deriving from role theory and formal analysis, which were then tested on three societies. Binford's work (1971) emphasised the significance of "social persona" as "a composite of the social identities maintained in life and recognized as appropriate for consideration at death" (p. 225) by examining ethnographic databases of forty societies. Goldstein (1976) focused on Saxe's eighth hypothesis of the functional relationship between cemetery and descent group, and tested it with thirty ethnographic cases. Tainter (1978) surveyed one hundred and three societies worldwide in order to explore the relationship of the social rank of a person and differential treatment of the dead.

With regard to grave goods, Tainter's work (1978) paid more attention to their roles when making cross-cultural generalizations about mortuary practices. He explored

social complexity by measuring both horizontal (age and sex) and vertical (ascribed or achieved) dimensions of status in terms of studying the amount of "energy expenditure" among burials. Results revealed that the social rank of individuals was marked much less by grave goods than by the degree of energy expenditure in funeral activities (Tainter 1978: 121). Tainter concluded that the quantity and quality of grave goods were not good indicators of (vertical) social rank of the deceased.

These cross-cultural studies, however, shared the problem of how to adapt ethnographic regularities to the archaeological study: a few early studies had shown a lack of a predictable correlation between these two spheres (e.g. Ucko 1969). The emphasis on cross-cultural generalizations, in some ways, reduced different motivations, practices, and forms into universal processes, that is, reduced cultural variability to universal sameness, and hence, was a denial of history (Hodder 1982: 5). This denial of history, emphasizing synchronic variation and transformation, also sees mortuary data as a passive reflection of social development. The causes of change are thus explained by reference to non-social factors, sought outside social life. Mortuary practices were either a buffering or controlling device (e.g. Flannery 1972), or reflected social change by means of a parallel increase in status grades (Tainter 1977).

In addition to creating cross-cultural generalizations, grave goods are often seen as an important piece of mortuary evidence which is used to identify whether a certain past society was, relatively, an egalitarian band, a tribe society, a ranked chiefdom, or a class-stratified state (Parker Pearson 1999: 72-3). For investigating social complexity, grave goods were often used as a type of wealth index, and exotic goods were often seen as more precious, in order to reveal social differentiation, or even inequality among social groups (O'Shea 1981; Renfrew 1986; Shennan, Susan 1975). Also, distribution

patterns of grave goods at a regional scale are usually viewed as representing the nature of the political economy of complex societies, such as the redistributive model of a chiefdom organization (Frankenstein and Rowlands 1978; Hinton 1990; Kristiansen 1978).

Susan Shennan's analysis of Branc mortuary patterns (1975) provided a clear example of how grave goods are used as a wealth index. Through quantitative techniques, she created a value scale of each type of grave goods in terms of its labour involvement. Within this scale, exotic goods were given higher places because they involved not only manufacturing labour but also transportation. Shennan argued that in Branc society, sex and age were clearly marked by body position and grave orientation, as well as certain types of grave goods. She found that the most precious items, such as specific head-dresses and ornaments, types of pins, rings, and necklaces, were restricted to a few individuals, especially some women and girls. Shennan concluded that women either had higher social status or were dressed in wealth by their kin. Based on the cross-cultural ethnographic principle of wealth as ascribed heredity, Branc seemed to be a stratified, unequal society.

Frankenstein and Rowlands' (1978) investigation of Iron Age societies in central Europe provided a decisive study for the redistribution model of the chiefdom level. They argued that there existed a hierarchy of paramount and lesser chiefdoms in the Late Hallstatt Iron Age (ca. 650-450 BC), which could be identified by the presence of precious grave goods. Paramount graves often contained a cart and many other luxury items, including drinking equipment and gold items. However, lesser graves might also have a vehicle and drinking kit, but were without gold items. With regard to the exotic resources of many luxury items, Frankenstein and Rowlands' thought such distribution

patterns could be explained by the redistribution model of political economy of chiefdoms: powerful paramount chiefs controlled these long-distance trade activities; prestige goods were filtered down to the lesser chiefs.

The key to interpretation of the works of Susan Shennan, Frankenstein and Rowlands, and other similar studies, hinges on what significance we give to grave goods in either quantity or form, or both. However, this is the point often ignored, as Renfrew (1986: 144) pointed out: "...even though archaeologists have often, quite reasonably, assumed certain assemblages of objects ... to be indicative of the high status of the individual, the precise grounds for such a view have never been analyzed in any very satisfactory manner." For example, it cannot be assumed that gold items, which we esteem highly, as Frankenstein and Rowlands' work did, were necessarily of high value in the mortuary context of Iron Age Europe. In his study of Varna Cemetery in Chalcolithic, Bulgaria (ca. 4,000-3,500 BC), Renfrew suggested that the value of the grave goods can only be argued in the context in question. Thus, he proposed a framework of inference which serves to stress the value of gold:

1. Gold is used as a personal adornment in proximity to the body in two key positions that are recognized as particularly important in a cross-cultural perspective: the face...and the genitals.
2. Gold is prominent in objects that from their position may be regarded as of prime symbolic value.
3. Gold is dissembled; that is to say, objects sometimes are made to look as if they were made of gold when they are not.
4. Gold is used more economically (in terms of mass) than comparable materials such as copper.
5. Gold is inherently attractive...: it reflects light efficiently; that is, it is bright, indeed dazzling; ...it is unchanging through time, incorruptible. (Renfrew 1986: 148-9)

These five criteria might be still open to question, as Renfrew also recognized. He offered, however, a possible approach to establishing the relative value system of

grave goods not based on an intuitive assumption but on a framework of multiple inferences within the context. This idea of "context" stands at the centre of the development of post-processual archaeology.

Grave goods in mortuary context in post-processual archaeology

The most important transformation in mortuary archaeology during the 1980s was that the mortuary domain is not a passive reflection of social structure. It becomes clear that the relationship between the mortuary record and social structure is far more complex than the systemic approach would claim. The two fundamental concepts in post-processual approaches are: a) the recognition that mortuary contexts create a particular circumstance in which the same material item might have different meanings from non-mortuary contexts; and b) the interpretation of material culture in mortuary contexts depends on the ideological structures and symbolic codes (Hodder 1982; Parker Pearson 1982; Shanks and Tilley 1982). In brief, mortuary material does not necessarily reflect social relationships in life, but is reflexively involved in the reproduction of such relationships. Thus, an ideological approach has proven to be one of the most popularly used in mortuary archaeology (e.g. Cannon 1989; Parker Pearson 1982; Tilley 1984).

For example, Parker Pearson's work (1982), which investigates the changing trends in the treatment of the dead over the past one and half centuries in England, explains the decrease of pretentious and expensive burials as the result of an idealization of egalitarian society in modern England; the emergence of "hygienic" treatment as a scientific and medical appropriation; and the establishment of war memorials as the legitimisation of nationalism. In other words, Parker Pearson argues that the relationship between mortuary practices and society were: a) for the advertisement and display of

the social position of a group or individual; b) to embody economic as well as religious aspects; and c) to provide political legitimisation through conspicuous consumption of commodities (ibid: 110). His summary vividly reveals the post-processual, ideological approach toward mortuary practices:

> (a) The symbolism of ritual communication does not necessarily refer to the actual relations of power but to an idealised expression of those relations.
> (b) Relations between living groups must be seen as relations of influence and inequality where deceased individuals may be manipulated for purposes of status aggrandisement between those groups. Ideology as manifested in mortuary practices may mystify or naturalise those relations of inequality between groups or classes through the use of the past to legitimise the present.
> (c) The relationship between living and dead should be integrated in studies of mortuary practices; in particular the new role of the deceased individual and the context of death as a platform for social advertisement must be accounted for.
> (d) Social advertisement in death ritual may be expressly overt where changing relations of domination result in status re-ordering and consolidation of new social positions. (Parker Pearson 1982: 112)

It is also an obvious weakness, however, of overplaying the understanding of power relationships as the necessary end of mortuary analysis. As Tarlow points out in her mortuary study of bereavement and commemoration:

> The reduction of all relationships to the manipulation of power interests does not explain the complex understandings and concepts which structure our relationships with other groups or individuals. Above all, the explanation of ideology as a means of legitimating relationships of power and domination provides a very limited understanding of people's motivation for action. (Tarlow 1999: 23).

With regard to the reduction relationship, the ideological approach actually shares something in common with the preceding processual approach (McHugh 1999: 2-3; Tarlow 1999: 23; Voutsaki 1993: 28-9). Therefore, a crucial development since the late 1980s is the return to our understanding of mortuary behaviour in terms of ritual practice. Social anthropological research (e.g. Bloch and Parry 1982; Huntington and Metcalf 1979) thus enriches archaeological investigations: a ritual approach which sees

mortuary practices creating, rather than reflecting or legitimating, social reality. Here, French sociologist Robert Hertz's seminal work (1960), especially, contributed to our understanding of the social and symbolic aspect of death.[1]

Hertz's theoretical background parallels most works of the French *Année Sociologique*, and does not treat death as a supremely individual phenomenon but as a social aspect, which could be studied in its own terms. As he said, "Death does not confine itself to ending the visible bodily life of an individual; it also destroys the social being grafted upon the physical individual and to whom the collective consciousness attributed great dignity and importance" (Hertz 1960: 77). The mortuary ritual therefore has two jobs: disaggregation and reinstallation. A disaggregation of the deceased from the collective is represented by the temporary disposal of the corpse. The reinstallation meets the requirement of reallocating the roles the deceased once occupied. Thus, it is the actions of the living which are played out around the corpse and the grave, and it is mourners' actions which affect the treatment of the corpse.[2] Our concern now is not to identify particular ranks or statuses of the social roles once held by the deceased. Instead, mortuary practices can be seen as the means by which the living renegotiate relations of obligation, affinity and inheritance with their dead and ancestors, and "the body provides a potent symbol upon which such a discourse between the living may be projected" (Barrett et al 1991: 121; see also Barrett 1994: 51; Mizoguchi 1993: 225; Oestigaard and Goldhahn 2006). Parker Pearson's idea of "theatrical complexity,"

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[1] Moreover, Hertz's work has direct implication for my research since his analysis was based on the ethnographic data of Austranesian (mainly Dayak of Borneo) in which Tagalog-speaking people in southwest Luzon are included.

[2] In fact, Binford (1971) already recognized the importance of treating death as a social aspect, which is the major point processual approach emphasized and the earlier cultural-historical approach ignored. However, later developments of processual approach often over-simplified those social relationships, and were too quick to formulate general rules of cultural behaviour (see Trigger 1989: 294-303).

which is based on his study of early Bronze Age burial in lowland Britain, represented such an approach: seeing the deceased as the principal performer, the graves as staged picture composing body and objects, and the mourners as the active participants:

> The twin procedures of body and grave preparation culminate in interment. The location, the nature and arrangement of the assemblage, the positioning and orientation of the body may tend towards display, toward the construction of an image in death. The positioning of the body and objects suggest that it may have been on view. This may have involved the creation of a highly formalised, idealised and restricted identity in death, which has no connection with reality. The funeral is directed towards a moment of visual perfection. (Parker Pearson 1998: 32)

The ritual approach to mortuary study reminds us of an important phenomenon which was often ignored in many previous investigations: mortuary practices, like many other rites in most human societies, are often complex "rites of passage." Funerals involve not only close kin but often most of the community members; they can last for a period of time, sometimes even months; comprise many stages of rites; and involve many material objects. The different rites and materials involved in the entire process of mortuary practice, however, should all be seen as necessary elements, and each could have its own metaphoric logic and meaning. Consequently, what we often recognize archaeologically as grave goods, are the culmination of a series of actions by the mourners, from different ritual contexts, to represent the identity of the deceased, as well as to express their relationships to the deceased. For instance, in his study of mortuary behaviour of Bronze Age Britain, Barrett suggested that the different artefacts which accompanied the corpse in the grave could come from at least five sources:

1) decorative material attached to the corpse, such as beads on the clothes;

2) offered material placed in the grave around the corpse;

3) discarded material left by the mourners;

4) objects remaining inside the body; and

5) residual material caught up in the backfilling of the grave (Barrett 1994: 116 and 129 footnote 12).

Although in most cases it is not easy to differentiate among them, i.e. similar items offered for the dead or discarded by the mourners, Barrett reminds us that we must be fully aware of their different contexts and meanings.

In summary, post-processual archaeology introduced the perspectives of both power and ideology to mortuary study; it also revealed the multi-faceted nature of mortuary rites. This contextual approach also focused on criticising processual archaeology on its underlying assumptions, such as middle-range theory, social status model, and energy expenditure hypothesis. Although the post-processual approach has successfully argued certain presumptions – for instance, the prestigious grave goods that we see are not simply the reflection of his/her social status – archaeologists still face the challenge of extracting as much information as possible from a large quantity of mortuary databases, as McHugh points out:

> ...whatever theoretical stance is taken, the undeniable fact is that patterns do exist within cemeteries, and generally these patterns can be assumed to have some social meaning, real or ideological....The existence of such patterns will always require some explanation and consequently there will always be an interest in methods to uncover the 'meaning' of such patterns, irrespective of theoretical orientation and wider interests. (McHugh 1999: 62)

Therefore, although the processual approach fails to formulate cross-cultural generalizations to explain the complex relationships which actually exist between social behaviours and mortuary practices, the value of middle-range theory cannot be ignored. As Carr pointed out, "the disclosed patterns do offer the archaeologist guidance in selecting mortuary traits that are more likely to be relevant to social or philosophical-religious research problems" (Carr 1995: 108). Thus, it is still worthwhile and there have been attempts to improve this approach. Among these developments, the most

important is Carr's recent work (ibid:) exploring thirty-one non-state societies, and which expanded the exploration of many preceding works (e.g. Binford 1971; Tainter 1975, 1978). For example, compared to Tainter's work (1978; see discussion above), Carr's study, on the one hand, generally supported Tainter's findings that certain forms of energy expended on mortuary activities indicated the social rank of the deceased; on the other hand, Carr also found that the type (but probably not the quantity) of grave goods also frequently indicates the social rank of the deceased (Carr 1995: 180). In addition, Carr's investigation confirmed the vital role of philosophical-religious beliefs, which is ignored in preceding studies, in the cross-cultural interpretation of mortuary practices. He concluded that mortuary practices are determined by a sophisticated combination of circumstances of death, physical conditions, social factors, and religious beliefs/world views (ibid: 188).

With regard to the *meaning* of grave goods, although the post-processual approach has successfully argued certain presumptions – for instance, the prestigious grave goods that we see are not simply the reflection of his/her social status – the precise ground for revealing the possible value system has never been analyzed in a satisfactory manner. In terms of methodology, the revised middle-range study done by Carr (1995) still offers guidance to the archaeologist in selecting reasonable mortuary traits; and the pioneering work pursued by Renfrew (1986) even provides a framework of inference in establishing the relative values of grave goods.

Theoretical summary

In the foregoing sections, several theoretical considerations were discussed: the nature of the value of material things, the process of the creation of value, the existence of gradations of value among objects, the cultural implication of imports, and the social

significance of mortuary practices, as well as the possible "meaning" of grave goods. These can be summarized as follows.

The value of objects is not frozen in their material properties, nor crystallized during the production process, nor associated only with the society in which they were produced. The value of material things is created and changed during their whole social life: production, circulation, and consumption, even deposition. Ultimately, value is a form of human consciousness, and the essence of the value creation process is the reciprocally recognized relationships between people. Moreover, value is mutually defined to clarify the reproductive relationships of things and people, as well as to guide the actions taken to create a desired order. However, a value system is never universally applicable; it is only effective in specific historical, geographical and social settings. One distinctive feature of value systems is the existence of gradations of values among material items, which simultaneously assert both similarity and difference. Items of similar form or material are often differentiated in value, might be deployed in different ways, and might have various roles in social reproduction. Finally, mortuary behaviour is a crucial practice in social reproduction: it is a specific social setting which creates rather than only reflects or legitimises social reality. Mortuary practices materialize and objectify the social value of grave goods. The process of value creation in mortuary practice is thus mutually defined in terms of the social relationships between the dead and the mourners, as well as the value hierarchy of grave goods: the dead appear as the agent defining the value of grave goods, but without grave goods the dead cannot have his/her persona defined. In this respect, grave goods and the dead are reciprocal agents of each other's value definition.

METHODOLOGICAL CONSIDERATION

As discussed in the Introduction, specimens unearthed from burial contexts comprise the largest portion of trade ceramics in Philippine land sites. Mortuary practice forms one of the core rituals of social reproduction in Island Southeast Asia and in Luzon in particular (see Chapter Three). This section, accordingly, discusses methodological considerations, including the relevant quantitative methods, bridging the theoretical deliberations in the foregoing two sections and data analysis presented in the following chapters.

Working models

In the case of trade ceramics found in Philippines mortuary context, one key problem in understanding their value system is that we tend to think of trade ceramics as prestige goods, and as superior-status grave goods vis-à-vis locally made earthenwares. However, to seriously understand their value requires moving beyond simple dichotomies between trade ceramics and local earthenwares, and ask instead whether items of similar form or material are used in different ways and thereby establish gradations of values. Thus, the following analyses focus on two essential questions: First, were trade ceramic, prestige goods superior in social status and categorically distinct from local earthenwares? Second, were trade ceramics a coherent group without internal value differentiation?

Methodologically, the key point is how to develop a set of archaeological strategies for identifying gradations in trade ceramics and local earthenwares in terms of their different social uses within the mortuary context. In general, when patterns of similarity and difference can be identified which suggest fine distinctions within an overarching variation, the patterns provide an important source of social metaphors.

That is, an argument can be made for positing the existence of gradations of social values by looking for evidence of variation in the social uses of objects. It is necessary, then, to build up interpretations of the social uses of objects by searching out as many lines of evidence as possible. In short, it is essential "to identify characteristics of objects that make them appropriate for particular social uses, then to look for contextual patterns that would indicate they were used in this way" (Lesure 1999: 30).

As an attempt in this direction of value study, this research proposes to investigate the questions through examining certain hypothesised relationships, which treat trade ceramics as superior-status grave goods vis-à-vis locally made earthenwares. These hypothesised relationships concern: quantity, association, location, gradation, and imitation. This research will also extract more social references by testing other variables, including age, physical treatment (tooth-filing), body arrangement (head orientations), variation between sites, and different burial types.

Quantity

Although quantity is no longer seen as an absolute criterion in value judgement, analysis of the differences in numbers of ceramic vessels among burials is still an important means to assess the relative value between trade ceramics and earthenwares. There are two reasons to examine the differing frequencies of trade ceramics and earthenwares in burials. First, the quantity of exotic grave goods is often seen as an important archaeological indicator of social ranking, although it must be considered cautiously. Second, previous interpretations (Barretto-Tesoro 2003; Junker 1990; 1999a) of the social value of pottery vessels in the Philippines have often assumed that locally-made earthenwares were inferior-status grave goods vis-à-vis imported trade ceramics. For example, Junker (1999a: 177) considered that their contrast is represented as an

inverse relationship between the numbers of earthenwares and trade ceramics, as well as the distribution of some special types of earthenwares, which seemed to replicate trade ceramics. Thus, in her interpretation of Fox's data, Junker saw the relative social value as representing "*an inverse relationship between the numbers of foreign porcelains and locally made earthenwares as burial accompaniments*: burials with no porcelains or a single porcelain are more likely to contain earthenwares than burials containing three or more porcelains" (ibid: italics added).[3] However, because Junker's interpretation was not based on the original raw data, her suggestion that there was an "inverse relationship" between earthenwares and trade ceramics is open to question.

Assuming the inversed quantity relationship is valid, then the burials with no trade ceramics or only one trade ceramic are more likely to contain earthenwares than burials containing three or more trade ceramics: the more trade ceramics in a burial, the less earthenware vessels it should have. Statistically, there should be a negative correlation. Thus, the analysis set up a null hypothesis for the chi-squared test as: the distribution of common inhumations with differing quantities of trade ceramics across differing quantities of earthenwares is not different. If the null hypothesis is rejected when the distribution is significantly different, a Yule's Q coefficient (Shennan 1997: 116-7) will be applied to measure the strength of the relationship, and the direction of covariation (positive or negative). Finally, a Kendall's τ coefficient will be used as a further measurement of the strength of rank correlation between trade ceramics and earthenwares.

[3] Junker's statement seems to emphasize that this is Fox's original idea of the relationship between earthenwares and trade ceramics, she quoted Fox's work after her sentence cited here. However, Fox never commented on this relationship. What Junker quoted of Fox's work is a figure (1959: Fig. 4) of "relative number of potteries in individual graves," and the sentence is Junker's interpretation of Fox's data.

Association

The hypothesised relationship of association assumes that if certain classes of objects are generally found together with another group of objects, a similarity in the local value system can be supposed (van Wijngaarden 1999b). For example, Greek pottery found in the Early Iron Age "royal" tomb in Cyprus, together with many other imported artefacts from various origins, was interpreted to have possessed a symbolic value that represented local elites' taste for conspicuous consumption (Crielaard 1999: 277-80).

In the case of the Philippines, Junker (1999b), for example, makes a strong argument for the association between trade ceramics and other exotic or "precious" goods. According to Junker's study of warrior emblems in early Spanish accounts and ethnographic descriptions, she suggests that "...tattooing or body painting, filed and gold-pegged teeth, certain clothing designs, jewelry composed of animal parts, elaborately decorated bronze and iron weaponry, and 'trophy skulls' as near-universal markers of warrior status and political sway" (ibid: 29) among traditional lowland chiefdoms of the 16th through early 20th centuries. Therefore, a young male adult was interpreted as a high status "warrior" because of the appearance of a "Late Ming blue-and-white plate over his pelvis, a 15th century Annamese jarlet next to his left femur, at least five other porcelain vessels that were fragmented and scattered in the grave" (Junker 1999b: 28), together with the warrior insignia of two trophy skulls, several metal blades; boars' teeth; pigs' tusks pendants; and filed, gold-pegged, and betel-stained teeth.

Following this line of argument, associations between different groups of grave goods could reflect the social use and value dimensions of the artefacts under

consideration. The analysis examines metal tools and glass adornments, which are often seen as having higher social value, to investigate their correlations with pottery vessels. For comparison, clay spindle whorls, which are the most common grave good after pottery vessels, are chosen for analysis. Based on the above discussion, burials with more trade ceramics should be more likely to contain metal tools or glass adornments than burials containing few or no items of trade ceramics. Thus, a series of null hypotheses for chi-squared tests are set up as follows: the distribution of burials with and without metal tools/glass adornments/clay spindle whorls across differing quantities of pottery vessels (trade ceramics and earthenwares) are not different. Yule's Q coefficient will also be applied to measure the strength of association, as well as the direction of covariation.

Location

Spatiality is an essential property of the use of material culture. Specificity in the spatial arrangement, moreover, is an important means for presenting the process in which people compare and judge objects with reference to a value system (van Wijngaarden 1999b). The hypothesised relationship of location relates to understanding the importance of spatiality in the social use and value of objects. It could apply to various scales, such as several areas within a settlement (e.g. ceremonial/ritual vs. ordinary residence), or to different parts of the interred body (e.g. head, limbs, pelvis, etc).

The location relationship applied to burial contexts emerges in recent archaeological studies of value (Brück 2004; King 2004; Pader 1982; Pearson 1998; Thomas, J. 1991). Julian Thomas' (1991: 37-9) interpretation of beaker burials, based on David Clarke's analysis of the deposition of the body relative to the beaker, suggests

that the position of the grave goods comprised a part of the process of signification with regard to the body. For instance, those burials with a beaker behind the back of the head were predominantly male adults; also many of them had other grave goods (e.g. battle axe or metal dagger) in front of the face. In contrast, those burials with a beaker placed in front of the face most often lacked other grave goods; most child burials were in this condition.

Another case is Pader's work of early Anglo-Saxon cemeteries (Pader 1982), which provided a systematic investigation on this topic. Her analysis revealed that there existed close relationships between locations of grave goods and other components of the grave such as sex, age, skeleton position, and grave distribution within the cemetery. She analysed these patterns under the principles of congruence, addition, substitution, fit through anomaly, and deviance (ibid: 113). Though there are few graves which are absolutely identical, and thus the principles are only generally applicable, they can, in effect, be used for describing the variations among the graves. For example, the congruence principle is to be "a regular space-use on and around the body in conjunction with a regularly corresponding skeletal position" (ibid: 114).

For the Calatagan burials, some relationships between certain pottery vessels and specific body positions were recognized during the excavations of Kay Tomas and Pulong Bakaw (Fox 1959: 356-7). Even though Fox did not further examine these, he pointed out important mortuary behaviour.

The manipulation of grave goods in relation to the human body, therefore, is potentially a highly effective indicator of the social value of trade ceramics within mortuary contexts. Spatiality in this research is studied through two hypothesised relationships of location and gradation (see next section). The location relationship

concentrates on whether there existed a contrasting pattern between trade ceramics and earthenwares across different body positions. The null hypothesis is that the distribution of pottery vessels across various body positions is not different. In addition, the location analyses are divided into two tests: the first test reveals the general distribution pattern across the body; and the second focuses on elucidating possible polarities of body spatiality, an essentially symbolic feature of the human body (Hertz 1960).

Gradation

Instead of treating trade ceramics as a coherent group of grave goods, the theoretical study of material objects suggests that hierarchy is one of the key characteristics of value. Values have degrees, and the gradation of values is from inferior to superior. Thus, as trade ceramics comprise many different types of size, form, glaze, decoration, etc., it is reasonable to consider whether there existed an internal hierarchy, or at least differentiation, among those trade ceramics found in the burial context.

As recognized by Fox during the excavations, it seems some type of relationship existed between certain pottery vessels and particular body positions:

> Chinese plates were frequently inverted over the pubic area; saucers placed beneath the hands; and small Sawankhalok jarlets arranged behind the head. In general, vessels were found around and behind the head, near the waist, and at the feet, but there were exceptions. Generally, too, smaller potteries were found with infants and children. Trade potteries were more frequently placed closer to the remains than the earthenwares. It would appear that the trade potteries were wrapped with the remains whereas the local earthenwares were merely placed in the graves. (Fox 1959: 356-7)

In her interpretation of Fox's report, Junker (1999a: 177) claims that there existed a gradation within trade ceramics: "a number of graves stand out by their assemblage of high-quality Chinese porcelain, while mass-produced Sawankholok

porcelain, low-quality Siamese and Annamese porcelains, and locally produced earthenwares are more widely distributed among the remaining burials." Unfortunately, there is no reference as to how Junker reached her conclusion of internal hierarchy among pottery vessels. The question here is how to reveal this type of gradation relationship archaeologically. One way to materialize the gradation of objects is to examine their different spatial distributions through various spatial locations.

For example, to investigate the value gradation of greenstone in Middle Formative Mesoamerica (850-400 BC), Lesure (1999) looks into the density distribution of three kinds of greenstone ornaments (pendants, beads, and ear spools) across five types of contexts inside the settlement, including ceremonial, elite residence, elite/ceremonial, residence, and midden. He found that the distribution of greenstone ornaments indicates no exclusivity across each context (ibid: 39, Table 3-1). Thus, Lesure suggests that the greenstone ornaments "may have been significant in horizontal as well as vertical social relationships" (ibid: 38).

Van Wijngaarden's work (1999b) on the Mycenaean pottery found at Ugarit, Syria, applies a similar approach to investigate the value system of those imported vessels in a local context. For van Wijngaarden, the value system of goods is objectified by the desirability for and accessibility to them. Methodologically, the spatial distribution of artefacts indicates which objects were available to different social groups. She examined the distribution of three types of exotic Mycenaean vessels, small stirrup jars, amphoroid kraters, and conical rhyta, across three kinds of social contexts: domestic, funerary, and religious. She then interprets the three types of vessels according to their different recovery patterns as: everyday objects (small stirrup jars), rich household objects (amphoroid kraters), and religious prestige items (conical rhyta).

Therefore, one crucial aspect of applying the principle of location to the study of the value systems of objects is whether we understand enough about the archaeological and cultural contexts of these locations. As Whitelaw comments on van Wijngaarden's paper (1999b):

> ...interpretations of the meanings of particular Mycenaean vessels are based on the differential distribution of different shapes in different excavated contexts, and the specific meanings attached to those vessels, depend on our understanding of those contexts. The difficulty is that the latter have not, in the main, been subjected to a similar sort of critical assessment. (Whitelaw 1999: 33)

That is, unless there is solid evidence of the contexts, it is difficult to argue the value of specific types of pottery vessel just because it was more often recovered at a particular body position. Bearing this point in mind, it is still worthwhile to consider whether there existed internal differentiation among various types of pottery vessels. The null hypothesis can be set up as: the distribution of various forms of pottery vessels across diverse body positions is not different.

In principle, instead of seeing trade ceramics as a whole, the subsequent analysis will investigate the distribution patterns of individual types of trade ceramics across various body positions. This research classifies the trade ceramics based on three criteria: provenance, glaze, and form. Unfortunately, information about provenance and glaze is often sketchy and incomplete for further quantitative research. The analysis, therefore, concentrates on forms of pottery vessels (see Appendix for details in pottery form classification).

Imitation

Imitated, or locally-made copies of exotic objects, hold a special role in understanding the value system archaeologically. Some research has assumed that

imitations were considered inferior-status goods compared to authentic items. For example, when investigating the significance of Mycenaean pottery, it is often presumed that Aegean-style vessels made in Cyprus were "cheaper versions of the more valuable imports for poorer people" (Cadogan 1991: 169-70; see also Åström 1998: 263). However, some argue that the imitation objects were not seen as inferior-status goods. For instance, van Wijngaarden argued that, with regard to their use in the mortuary context, the consumers of Aegean-style pottery, both authentic and imitation goods, "were either not aware of the geographic origins of the vessels, or did not care" (van Wijngaarden 1999a: 34) (see also Sherratt and Sherratt 1991). Kristiansen (1989), in his study of the early Bronze Age in Europe, suggests that by imitating traditional forms of stone tools, bronze objects could not be seen as inferior or superior goods. They coexisted for some time along with stone goods within the traditional communal ritual, and were employed as both subsistence tools and prestige goods. Thus, whether the imitation objects are seen as inferior-status goods compared to the authentic is still open to debate.

For Calatagan mortuary practices, even though Fox did not see trade ceramics as a wealth indicator, he still treated the imitations as substitutes for when the authentic trade ceramics were not available for grave goods (1959: 345). This led to a possibility of seeing imitations as cheaper versions of authentic objects. Junker, therefore, interprets Fox's discussion of the imitation earthenwares with the suggestion that "...many of the earthenware jars and bowls were attempts to replicate Chinese porcelain forms, but their distribution in "porcelain-poor" graves indicates that these locally manufactured vessels were considered inferior-status goods used in interments for which household heirloom porcelains were not available" (1999a: 177).

According to this argument, it can be hypothesized that imitation earthenwares should occur more often in graves with few or no trade ceramics. Thus, the hypothesised relationship of imitation sets for testing the null hypothesis of the distribution of common inhumations, with and without imitation earthenwares across the differing quantities of trade ceramics, is not different. In addition, to test their quantitative relationship, this research investigates the differences in use of patterns among trade ceramics, imitations, and common earthenwares. It can be assumed that, because trade ceramics were copied, the use patterns of imitations should be close to their counterparts of trade ceramics rather than other forms of earthenwares. The analysis examines the use patterns using principal components analysis with regard to forms of pottery vessels and body positions, and is based on the analysis of gradation.

Age

Age is one of the most important factors in social relationships. In studying the development of social complexity, the appearance of grave goods in child or infant burials is often seen as an indicator of hereditary social ranking (Binford 1972; O'Shea 1984: 42).

For the Calatagan material, Fox (1959: 344) applied an age-group system to categorize all available skeletons: adult (17 and plus years old); juvenile (11-16); child (3-10); and infant. According to Fox's report, juveniles, children and babies were not excluded from having grave goods, some burials even had as many pottery vessels as a few of the adults, and some had metal tools, glass ornaments, or even gold jewellery (ibid: 351-2). Junker thus suggests this indicates that "social ranking reflected in mortuary ritual probably involved a hereditary component" (1999a: 177).

It is, therefore, worth investigating whether there existed differences among these age groups. This research sets up a general null hypothesis as: the distribution of use patterns of pottery vessels across various age groups is not different.

Tooth-filing

Tooth-filing is a form of body decoration, which is seen anthropologically as a transformation in which the natural human body is converted into a socio-cultural demonstration (Milner and Larsen 1991). In the sixteenth century, tooth-filing, together with tooth pegging and colouring, was widely practiced among adults throughout the Philippine archipelago (see sections on physical appearance of the Philippines in Scott, W. 1994). There were variations in filing style and pattern, but the desired appearance was to make them even and symmetrical. It seems there was no limitation of this practice to specific genders or other statuses. However, because a professional dental worker was paid for his service, according to an early seventeenth century document for Visayan society (Scott, W. 1994: 19), a client must have been able to afford it. In other words, tooth-filing might or might not have been a symbol of social status, but the individual at least must have had the economic means to pay for it.

In Calatagan, according to Fox's (1959: 353-5) observation for Kay Tomas and Pulong Bakaw, tooth-filing was common among adults; approximately 82% were, undoubtedly, males and females. It was not correlated with any difference in quantity or type of grave goods. However, among 264 diagnosable adults, three-quarters of them (198 cases) had traces of tooth-filing, and it occurred in both males and females. As tooth-filing was practiced among a significant percentage of the adult population, it is worth examining whether its distribution is correlated with differences in pottery vessels. According to the assumption that tooth-filing was a symbol of social status, it is

reasonable to propose that tooth-filing burials should have more trade ceramics than those without tooth-filing.

Orientation

In the study of mortuary practices, the orientation of the body in the grave is one of the key propositions offered in the explanation for the relationship between mortuary custom and socio-cultural factors (Binford 1972: 218-9). In Calatagan, variation in orientation is one of the most significant features. Fox, in his early report (1959: 343), believed that the south direction was the most common orientation for the Calatagan burials, and that the west was the profane direction. Fox's observation was based on only the two nearby sites of Kay Tomas and Pulong Bakaw, without a regional perspective on the Calatagan Peninsula.

Fox's explanation for the differences in orientation is related to socio-cultural identity (1959: 343-5). He did not exclude, however, the possibility of geographical factors, such as the shape of the cemetery area. Fox proposed that the commonly profane direction towards the west was culturally shared among the sites; and the distinct direction at each site represented the centripetal character of village life. Thus, it is sensible to investigate where differences existed between various orientations in terms of the hypothesised relationships of quantity and location.

Site

Although this research views mortuary practices at the seven Calatagan sites as one cultural tradition (see detailed discussion in Chapter Four), it is undeniable that differences existed among them. For example, variation in orientation is one of the most significant features among them, with each site having its own dominant orientation.

Differences among the sites suggest an important issue in the study of social use and value of trade ceramics. According to models of chiefdom political economy (Friedman and Rowlands 1977; Earle1997: 73), which are often used for late proto-historic Philippines (Bacus 1999: 72-5; Junker 1999a: 171-80), exotic goods are an essential means of wealth finance used by elites as political currency to compensate people. That is, small-scale communities with less powerful elite might have had limited access to exotic goods, or obtained them as gifts from regionally powerful chiefs within an alliance network. Finely made, rare, exotic goods, moreover, might be restricted to the higher-ranking elite in the central settlement, and lower quality products were more likely used to compensate allies in subordinate communities.

Thus, this research sets out a general null hypothesis that the distribution of pottery vessels across the seven sites is not different. If this chiefly political economy model is right, it is expected a certain hierarchy among sites will be seen. A hegemonic site should have more people who had access to trade ceramics and earthenwares than a less powerful settlement. However, what needs to be taken into account is the quantity of burials (i.e. numbers of common inhumations), because there is no concrete evidence about the size of each site.

Uncommon burial (headless)

According to early Spanish records, head-hunting was widely practiced throughout the Philippine archipelago. In late protohistoric Tagalog society, the head was brought back as a trophy of war and speared on a stake or displayed in front of the house (Scott, W. 1994: 231-2). There is no clear information on how the body was treated. It is known, though, that for those who were killed by violence (in war or by being head-hunted), their burials were not profane but were often served with special

offers, even with human sacrifice (ibid.). The archaeological evidence also reveals that headless individuals were buried and were offered grave goods. The investigation thus examines whether there existed differences between common inhumations and headless burials in their mortuary practices via testing the hypothesised relationships of quantity and location.

Note on statistical methods

This section gives a brief discussion of the various statistical methods used in this research. Instead of statistical principles and calculation procedures (Drennan 1996; Fletcher and Lock 1994; Shennan, Stephen 1997), this section focuses on their applications to different hypothesised relationships. First of all, all the significant levels are set at 0.05, but it will be noticed that 0.01 is sometimes used.

Among all quantitative methods used in this study, the chi-squared test is the most commonly applied. In principle, the chi-squared test is used for measures of association based on data at the nominal scale. Although there are two slightly different versions of the chi-squared test (Drennan 1996: 187; Shennan, Stephen 1997: 104), this research carries out the chi-squared test for cross-classified data only. Nevertheless, the limit of the chi-squared test is that it does not tell us about either "the way in which the variables are related" or "the strength of a relationship" (Shennan, Stephen 1997: 113). Therefore, if the null hypothesis is rejected when the difference is significant, this research applies three tests to measure the strength of relationship and the direction of covariation (positive or negative): phi-squared coefficient $\emptyset^2$, Yule's Q coefficient, and Kendall's τ coefficient.

Phi-squared coefficient $\emptyset^2$ is the simplest method to measure the strength of the relationship. It divides the chi-squared value by the sample size, since chi-squared is

dependent on sample size (Shennan, Stephen 1997: 115-6). In the case of a 2x2 table, the value is between 0 and 1, which stands for no relationship and absolute association, respectively. Phi-squared coefficient can also apply to a 2xK (or Kx2) table, and the meaning of the coefficient value is the same. In a 3x3 table, or where the number of rows and columns is more than two, the phi-squared value must be standardised; however, this research does not use it.

Yule's Q is a simple but powerful means to measure the strength of association, which also gives the positive or negative covariation in terms of a value between +1 and –1 (Shennan, Stephen 1997: 116-8). There are two weaknesses for Yule's Q: first, it is only available for the 2x2 table; second, it cannot differentiate the "complete association" "from the absolute association" (ibid: 118). However, taking these limits in account, Yule's Q can be a very helpful measure.

Kendall's τ coefficient is a type of measurement for the strength of rank correlation (Fletcher and Lock 1994: 122; Shennan, Stephen 1997: 145-7). Kendall's τ also takes values from +1 to –1, a perfect positive correlation to a negative one. The strong point of Kendall's τ, not like the best-known Spearman's r coefficient, is that it can be used when many of the cell counts are low or even zero.

In addition to tests of association, correspondence analysis (CA) is also used in certain situations to demonstrate relationships between variables in multidimensional spaces. Correspondence analysis, like principal components analysis (PCA), is an ordination method which can consider objects and variables together; we can then extract more information directly from how the two are related, which aims to:

> ...compress the information contained in a large number of variables into a much smaller number of new variables, ideally only two or three, while losing as little as possible. We can then produce scattergrams of our data, expressed in terms of these new variables, which will allow

visual appreciation of a large amount of information. (Shennan, Stephen 1997: 266-7)

Unlike PCA, CA is, in a sense, the technique "suited to the analysis of data consisting of counts or presence/absence of nominal categories" (ibid: 308). The computer program used in this research for calculating CA is Canoco (4.0 version).[4]

[4] Canoco (4.0), written by Cajo J. F. Ter Braak, published by Centre for Biometry Wageningen, The Netherlands.

CHAPTER THREE
PROTOHISTORIC SOUTHWEST LUZON SOCIETY AND CULTURE

In addition to theoretical and methodological considerations, the historical background of culture must be taken into account for a better comprehension of the issues raised in the preceding chapter. The archaeological material for this study has the advantage of close ethnohistoric analogy. Chronologically, the late protohistoric period ranged from the late 14th to early 16th century, just prior to the eve of Spanish arrival. Geographically, it is located near the heart of the Tagalog-speaking world, which is around modern Metro Manila, where early Spanish writers left records in bulk compared to other regions. Both criteria support a reconstruction of protohistoric Philippines useful to archaeological investigation. The following reconstruction is mainly based on ethnohistoric material,[1] but is supported by both ethnographic and archaeological research. The focus here is on the Tagalog society in southwest Luzon, but, for purposes of analogy, will extend to other lowland societies, especially Pampanga to the northwest of Manila and the Visayan Islands in central Philippines.

The following is mainly divided into two parts: The first part will give a general background of geographical features and its niche in the long-term maritime trade of the South China Sea. The second part discusses the sociocultural condition of the Tagalogs in southwest Luzon around the 16th century. It will focus, especially, on three issues: social structure, economic activities, and cultural perspectives of belief, death, and mortuary practice. These aspects of protohistoric Philippine life are significantly related

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[1] Chinese and Spanish records provide us with the main sources for reconstructing protohistoric Philippines. There are many discussions on the nature and quality of those early materials, among them William Scott's (1984, 1994) invaluable contributions. More recently, Junker (1999a: 29-53) provides a detailed review on the sources including not only ethnohistoric but also archaeological materials.

to my theoretical argument as discussed in the previous chapter, as well as the conditions of mortuary materials presented in the following chapters. Finally, a section focuses on the material culture of trade ceramics and earthenwares in the protohistoric Philippine society. Ultimately, the historical picture provides an important framework for interpreting mortuary practices, especially patterns of grave goods.

Figure 3-1 Map of Southwest Luzon (after Wernstedt and Spencer 1967: 394, Fig. 56).

SOUTHWEST LUZON

Southwest Luzon (Figure 3-1), a transition region lying between central/southern Luzon and the middle sector of the Philippine Archipelago including southeast Luzon and the Visayas, is a region dominated geographically by lakes and the crater (Burley 1973: 181-9; Wernstedt and Spencer 1967: 392-409). Culturally, it is almost a purely Tagalog-speaking area in which Chinese, Spanish, and American influences are also deeply planted. Although the whole region of southwest Luzon is labelled linguistically as the heart of the Tagalog-speaking world, there were local distinctions recognized in the early Spanish period. Manila-Laguna de Bay, Cavite, coastal Pampanga, and coastal Batangas all represented individual cultural groups. On the other hand, as a dominant cultural group, the Tagalog-speaking world extended beyond these areas geographically and reached to nearby areas (Morga 1971: 269) and islands, especially Mindoro to the southwest (Loarca 1903: 83).

In modern politics, southwest Luzon comprises the three provinces of Batangas, Cavite, and Laguna, as well as parts of Quezon Province and Rizal Province owing to its geographical affinity. The total area is about 7,000 square kilometres. The alluvial lowlands and the volcanic uplands are the two essential elements providing the landscapes of southwest Luzon. Old sedimentary rocks outcrop only along the west coast of the vicinity of Nasugbu, Batangas Peninsula and the arched flexure north of the Laguna de Bay.

On the west side of Laguna de Bay, the alluvial lowland extends from the Central Plain southward into the area of Taal Lake. Laguna de Bay is the principal physical feature of the north part of southwest Luzon. It is surrounded by low-lying lake plains and receives the flow of numerous small river systems. Among these rivers, Pasig

River seems the most important since it flows northeast into Manila Bay and provides a convenient communication route. At the east and northeast side of the lake basin, the marginal hill of the Cordillera Central runs from the north down to the southeast region, and leaves very narrow stretches of plain between the lake and hills.

The south part of the region is dominated by the massive pile of Mt. Banahao to the east and Lake Taal to the west. Mt. Banahao is a large volcano, 2188 metres in height. Lake Taal comprises the principal landscape of the region, which is roughly one third the area of Laguna de Bay. There are some other groups of lesser volcanic uplands occupying the landscape. To the southwest, at the coast and at the south portion to the east of Batangas town, are a series of volcanic peaks.

The soils of much of southwest Luzon are formed either of alluvial deposits or weathered volcanic tuffs, ashes, and mixed ejecta. The lower lake and coastal plains have soils of somewhat heavier textures, which are above average in quality and ease of wet-field rice cultivation. On the hill and upland areas, soils weathered from originating volcanoes are the most widely distributed, coupled with the favourable characteristics of the coconut. Southwest Luzon is not a region of significant mineral resources, nor of rich forest resources. In its early period, this region possessed a heavy forest, but it has been cut down for farming, except for the eastern section of Laguna along the lower slopes of Cordillera.

Climatically, southwest Luzon lies on the southwest margins of the typhoon belt. Although it does not suffer the frequency of storms as does the north and east of Luzon, typhoons still annually sweep across and damage this region with strong winds and heavy rainfalls. This region has a summer rainy season from the southwest monsoon,

ranging from late May to October. The dry season begins in November and extends to April, which is generally hot and dry.

The southwest part of Luzon occupied an important niche for maritime trade in Southeast Asia, even before Europeans became seriously involved in the late 16th century. The long-distance maritime trade route passing southwest Luzon, based on the study of historical geography (Hirth and Rockhill 1911; Wheatley 1959), was either called "the eastern route to Southeast Asia", from the viewpoint of ancient Chinese merchants, or "the northern route to the Spice Islands" in terms of the most famous destination of pan-Asian maritime trade, the northern Moluccas (Figure 3-2; see also Mills 1979; Ptak 1992, 1998). Over time, this network had different sub-routes. The earlier route (Ptak 1992: 27-8), when trade ships started their voyage in China, travelled south to Luzon, passed Mindoro or the Calamianes Islands, and entered the Sulu Sea, followed by the Celebes Sea, and finally the north Moluccas Islands (Maluku). This route appears to have been in regular use since the late 13th century, and possibly even earlier. Another trade route is the so-called "Malacca-Brunei-Luzon route" (ibid: 39), which connected the Malacca strait to northwest Borneo and further to the Philippines. This route became popular at the turn of the 15th to the 16th century.

According to early Spanish records, southwest Luzon had already been a relatively heavily populated region when the Spanish first arrived in the late 16th century (Loarca 1903: 81). The area of Manila Bay around the mouth of the Pasig River was the most often-noted during the Spanish period. In addition, there were scattered settlements along the Pasig River and around the shores of the Laguna de Bay, as well as along many other river mouth areas such as Balayan Bay and Tayabas Bay. Many of the churches and towns established in the early Spanish period actually date to the pre-

Hispanic period, and generally represented the indigenous settlement pattern (Chirino 1969).

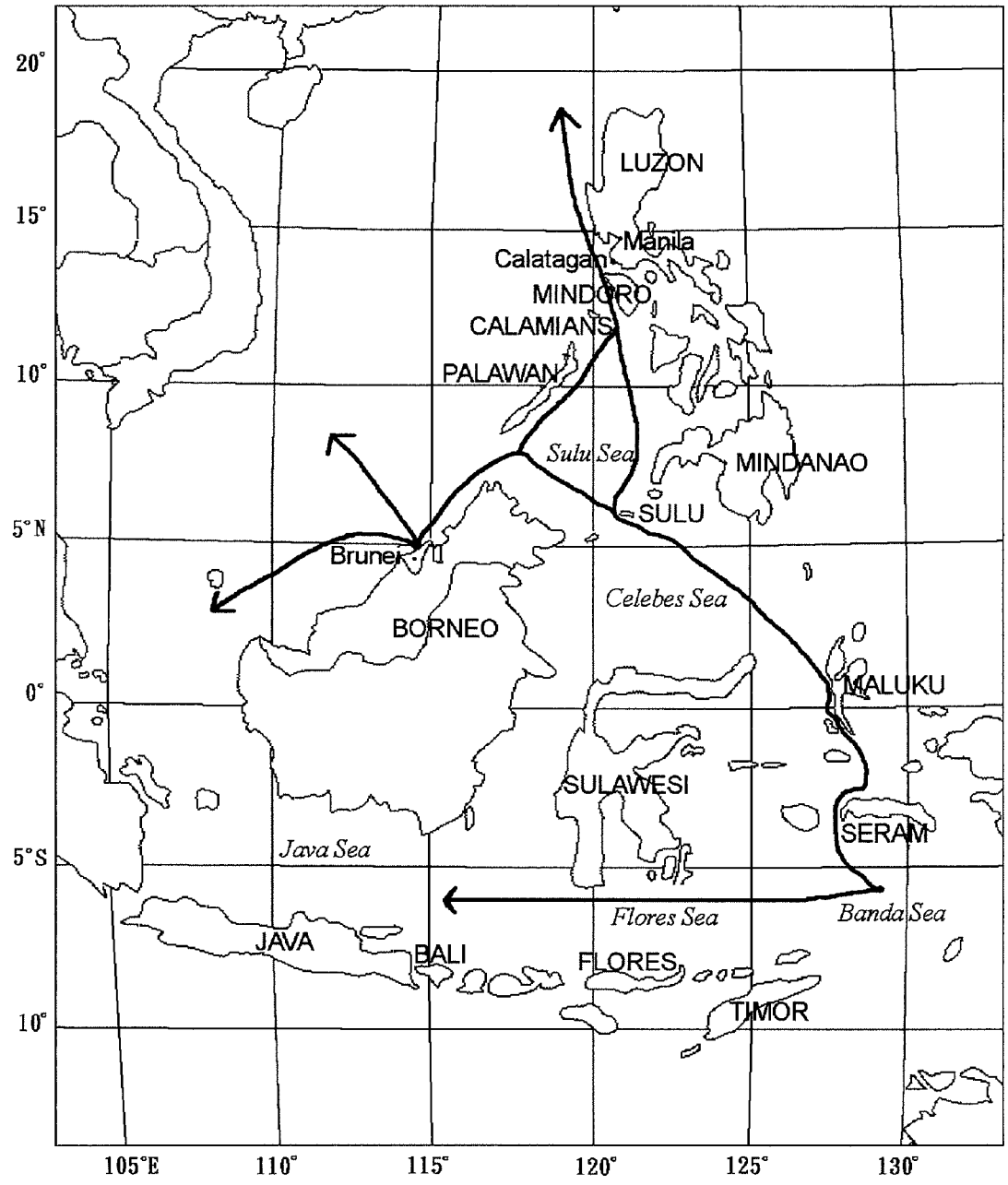

Figure 3-2 The Northern Trade Route to the Spice Islands (data based on Ptak 1992: Map 1,2,3)

In general, settlement was along the waterside, either on the seashore and/or between rivers or creeks (Anonymous 1979: 339; Morga 1971: 270). The houses were built upon piles; each house stood alone, with materials of timber, bamboo, and palm

leaves. The lower part of the dwelling was for the fowl and cattle, and fenced with bamboo or stakes. The upper domestic part could only be reached by ladders. The rooms were small, had little in decoration, and were low roofed. The houses and dwellings were generally gathered together, and not far from their fields. In addition to these dwellings of the common people, there were the houses for the chiefs. Buildings for the ruling class were bigger, roomier, more comfortable, and with better materials, although the architectural structure was basically the same (Morga ibid.).

THE TAGALOG-SPEAKING WORLD

The word TAGALOG is a contraction of *taga* and *ilog*, river dweller (Scott, W. 1994: 190). *Taga* means a native inhabitant, and *ilog* is river. However, the self-naming of Tagalogs, according to anthropological definition, should be *tawo* (person), a term they only used in regard to themselves. In Tagalog, there were many terms to refer to specific peoples: people who spoke other languages were called *samot* or *samok*. Chinese were called *sanglay*. 'Negritos' who lived in the mountains were *ayta*. The offspring of two different ethnic groups were called *balugo* (ibid.).

In the eyes of early Europeans, the people in southwest Luzon had fine features and were of average height with light brown skin and very black hair (Anonymous 1990: 109; Morga 1971: 247). For Tagalogs, human beings were thought to be distinguished from wild animals by certain styles of cosmetic refinement. Although they lacked the custom of tattooing popular in the Visayas of central Philippines, Tagalogs liked to decorate their teeth and ears. According to early Spanish accounts (Anonymous 1979: 341; Loarca 1903: 83; Morga 1971: 247), Tagalogs had decorative dentistry, such as colouring, filing and pegging their teeth, and sometimes even using gold to do so. They also pierced their ears and stretched them as long as possible with heavy earrings. The

habit of betel nut chewing was popular, which reddened their lips and teeth (Morga 1971: 258-9).

Social Structure

To understand Tagalog society, it is necessary to begin with the concept of *Barangay*. *Barangay*, or *balangay* (or other similar spellings), appears in all the major languages throughout the Philippines and bears the same meaning: a boat (Scott, W. 1994: 4-6).[2] For Tagalog society in particular, *barangay* also referred to the smallest political unit, as well as the basic kinship unit. As first described in detail by the Franciscan priest, Juan de Plasencia, in the 16th century:

> These chiefs ruled over but few people; sometimes as many as a hundred houses, sometimes even less than thirty. This tribal gathering is called in Tagalog, barangay. It was inferred that the reason for giving themselves this name arose from the fact (as they are classed, by their language, among the Malay nations) that when they came to this land, the head of the Barangay, which is a boat, thus called ... became a dato. And so, even at the present day, it is ascertained that this Barangay in its origin was a family of parents and children, relations and slaves. There were many of these barangays in each town, or, at least on account of wars, they did not settle far from one another. They were not, however, subject to one another, except in friendship and relationship. The chiefs, in their various wars, helped one another with their respective barangays. (Plasencia 1903[1589]: 173-4)

That is, a *barangay* can be seen as a highly localized government (a barrio) ruled by a chief (a datu) who governs like the captain of a boat. Father Plasencia's interpretation of *barangay* was adopted by the Spanish colonial government to mean a tribute collecting unit (Woods 1999).[3]

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[2] According to Morga (1971: 252), Barangay is a "slender, light, low-lying boat held together with small wooden bolts and as narrow at the stern as at the prow."

[3] According to Woods' study using 17th century Tagalog documents, while the early Spanish writing emphasised the *barangay* as the basic political unit, with its roots in the pre-hispanic past, Tagalog documents rarely mentioned this term. In Woods' analysis, while the Tagalog saw *barangay* as a basic

A *barangay* should never be confused with a *bayan*, a settlement. According to the early Spanish dictionaries, a settlement or community or town is called *bayan*, which means "place for a pueblo" or "pueblo where the people live" (Scott, W. 1985: 101). Also, a *bayan* is a primary unit of local identity or community loyalty in Tagalog (Scott, W. 1994: 190). Normally, a *barangay* comprises tens to hundreds of households that were a part of a settlement (Plasencia 1903: 174). On very few occasions, was there only one *barangay* in one settlement, in this case called *pook* (Scott, W. 1994: 220). Usually many *barangay* comprised a *bayan*.

Though there are various opinions on the terms and definitions (Salman 1999; Scott, W. 1985: 99-111; 1994: 219-229; Woods 1999), scholars generally agree that most traditional Philippine societies, either Tagalog or Visayan, had a three-class social structure. In Tagalog, for example, "The ruling class was called *maginoo*, including datus, who were the heads of *barangays*; and their supporters were *timawa* and *maharlika*. Everybody else were *alipin* – slaves, bondsmen, or debt peons" (Scott, W. 1994: 219; see also Loarca 1903: 175-7; Morga 1971: 272-4; Plasencia 1903: 173-7).

The ruling class, *maginoo*, were those who could claim noble descent, and the man with personal supporters was called *datu*. A *datu*'s followings were called a *barangay*, literally a boat as discussed in the preceding section. Even though a *datu*'s legitimacy came from his lineage, his manipulation of power relied upon his personal charisma and wealth. A *datu* was expected to be a good administrator: to govern his followers and settle their disputes during daily life, to protect them from enemies and

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kinship unit in terms of relationships, the Spaniards focused on political structures for the benefit of colonization.

lead them in war. A *datu* was also a judge and carried out penalties, often with the assistance of the older men in the community. On the other hand, a *datu*'s privileges included receiving services, products, and respect from his people. Services were of seasonal field labour, occasional construction labour, seafaring duties, and even participating in military or raiding expeditions. Products were mainly those tributes of agricultural harvests (Morga 1971: 271; Plasencia 1903: 174-5).

A *datu*'s supporters, or non-slave followers, were called *timawa* and *maharlika* (Plasencia 1903: 175-6). Even though both were freemen and of a social class between the *maginoo* above and the *alipin* below, they came from different origins. *Timawa* were those who were formerly slaves but who freed themselves by repaying debts, purchasing their freedom, or just running away from their master (Scott, W. 1994: 223). On the other hand, *maharlika* were seen as a form of lower aristocracy, perhaps the illegitimate offspring of ruling members (Plasencia 1903: 174). Legally, neither could be sold nor bought. Their subordination to a *datu* was contractual, and they had the right to choose their *datu,* although the *maharlika* were less free than the ordinary *timawa.* They had the rights to cultivate the *barangay* land, and their normal obligation was servicing their *datu's* demands.

The third social class was called *alipin.* In a general sense, an *alipin* was a person in debt to another (Loarca 1903: 179-187; Morga 1971: 272-3; Plasencia 1903: 176), but it was always translated as slave in Spanish references. The *alipin's* subordination was obligatory until the debt was redeemed. His condition was attributed to three reasons: captivity, birthright, and debt. Also, there were two types of alipin : *namamahay,* house-holder, and *gigilid,* hearth slave (Plasencia ibid.). The former had

land rights, owned his house and personal belongings in the *balangay*, and the latter were chattel house slaves.

Economic Life

Subsistence activities, the major part of economic life, comprised food and handicraft production. The staple crop for the Tagalogs was rice (Morga 1971: 251). There were many different varieties of rice including both dry rice and irrigated rice. The importance of rice can be seen in the massive vocabulary about rice, concerning its field preparation, seeding, growth, processing, and uses (Scott, W. 1994: 199). In addition to rice, millet and many root crops were also common, as well as vegetables and fruits. Moreover, Tagalogs exploited both water and forest resources. Fishing skills included netting, trapping, hooking, and harpooning. They also collected other marine products, especially shells and turtle eggs. Hunting was popular as well, and involved the use of spears, arrows, and traps (Morga 1971: 254-260; Scott, W. 1994: 199-201, 203-4).

Handicraft production was also important to Tagalog economic life (Scott, W. 1994: 201-6). The potter was known to use the common paddle-and-anvil technique, and the potter's wheel was evidently unknown. There was no kiln, and pottery was fired in the open air with straw as fuel. Tagalogs were well known for their cotton clothes, with weaving mainly by distaff and backstrap loom, and basketry (Morga 1971: 263-4). Woodworking was limited to a few skills: hewing with an adze, but no sawing, for producing timber boards, fitted together with mortise joints or rabbet, and finished by carving. Boat-building technology, as well as seafaring skill, was also a Tagalog profession. There were many varieties of boats, with individual terms, for different situations (Morga 1971: 252-3; Scott, W. 1994: 206). Little is known about their

architecture except some names of house parts. Tagalogs also built, beyond houses within the residential areas, cottages, huts, and shelters in their fields or even in the forest.

Tagalogs also engaged in metalwork. They used a type of two-cylinder forge, which was well known in the Malay world, although there is no mention that Tagalogs had the technology to extract ore. However, metal bars, ingots, or even pans, were common on the list of trade since an early period according to Chinese documents (Chau 1226 in Hirth and Rockhill 1911: 159-166; Wu 1959). Gold wares seemed popular, and not only were worn by adults but also children; most gold was mixed with copper or silver, with pure gold hardly used at all (Morga 1971: 261; Scott, W. 1994: 201-3). Glass items were also common. They might have been imported from other Asian countries, but we cannot exclude the possibility of local technology (Francis 2002: 201-9).

When the Spaniards first set foot in the Philippine archipelago, they found an existing flourishing maritime trade between islands, as well as with other Asian states (Anonymous 1903b; Pigafetta 1995: 44). In fact, Europeans' first contact with southwest Luzon was closely related to trade. When the Spanish sailed from Cebu towards Manila in 1576, they captured two Chinese ships between Mindoro Island and Calatagan Peninsula, Batangas, southwest Luzon. Both ships were full of cargo, with trade ceramics comprising the majority: "...decks of both vessels were full of earthen jars and crockery; large porcelain vases, plates, and bowls; and some fine porcelain jars, which they call *sinoratas*. They also found iron, copper, steel, and a small quantity of wares which the Chinese had bought" (Anonymous 1903b: 76).

For the maritime merchants, the main trade goods they were seeking in the Philippines were mainly forest products such as beeswax, spices, and precious wood, as well as marine products including sea cucumbers, turtle, shells, mother-of-pearl shells, coral, and pearls (Hirth and Rockhill 1911: 159-166; Wheatley 1959; Wu 1959). Cotton cloth, especially those from Luzon or Mindoro, seemed to have become a new, important item beginning in the late 14th century (Chau 1226 in Hirth and Rockhill 1911: 159-161). On the other hand, maritime merchants used the following products for exchange in the Philippines: different types of trade ceramics, coloured glass beads, silk, and various metal objects such as iron needles, iron pots, iron bars, lead bars and gold. These products appear to have been the standard trade items throughout most periods till the early Spanish occupation (Hirth and Rockhill ibid.; Wheatley ibid.; Wu ibid.).

Culture and Belief

Whether ancient Tagalogs recognized a creator god is controversial according to early Spanish records (Scott, W. 1994: 233-4). Some said they knew one God, called Bathala, who was described as the maker of everything, and superior to other deities (Anonymous 1979: 334; Chirino 1969: 296; Loarca 1903: 171); but other informants were not so sure (Plasencia 1903: 186; cf. Morga 1971: 279). However, they did recognize many other deities, such as sun, moon, star, stone, tree, river, sea, mountain, field, and animal, such as crocodiles, etc., for which there was no one term applicable to all the forms of natural objects and forces. The Spanish referred to all these deities as *anito*. Some of the deities were named for their functions, or were the inventors of certain objects. Those deities were sometimes seen as agents of the Great Creator, but were requested directly in a ritual, not as intermediaries. Tagalogs adored their deities and regularly paid them offerings. There were also deities that could cause illness or

misfortune if not given the proper course of activities (Anonymous 1979: 335-6; Loarca 1903: 171-5; Morga 1971: 278-9; Plasencia 1903: 186-9).

Ancient Tagalogs made models or idols of these deities, and their images were called *larauan* (Chirino 1969: 298) or *licha* (Plasencia 1903: 189). They were generally anthropomorphic and could be as large as a few feet tall or be small enough to hold in the hand. These idols were made from different materials, such as wood, stone, gold, shell, clay, or even imported Chinese pottery figures. The image of a deceased person was also called *anito*, and was anthropomorphic in shape and made from different materials. In fact, early Spanish documents provide different, even controversial, information on the worship of ancestors and deities, since *anito* was applied to both (Morga 1971: 279; Plasencia 1903: 185-6). There was no temple, so the idols were kept in a type of spirit house, which was built at the corner of the house, often with a piece of personal item (garment or jewellery) (Chirino ibid.: 299).

The most important beliefs and rituals were given to ancestor worship. Tagalogs called the mortal soul *kaluluwa*, and the life spirit *diwa* (Scott, W. 1994: 238). They believed in an after-life, where souls went either to a place of rest for those who had performed great deeds, or a place of punishment for those who had done evil (Chirino 1969: 297; Morga 1971: 280; Plasencia 1903: 195-6). Thus, after a death, a ritual was performed to request the soul not to come back to this living world. The *kaluluwa* could go astray or be detained (by the evil deity or ancestral *anito*), and thus cause a serious illness or even death. The deceased ancestors were thought to be the most direct cause of illness and misfortune (Anonymous 1979: 336-7; Chirino ibid.), and were, therefore, pacified very carefully, either by sacrifices to their idols kept at home or through intermediation through shamans.

There were different types of shamans, male or female, among ancient Tagalogs (Plasencia 1903: 192-5). Among them, *catolonan* (or *katulunan*, or similar spelling) was the most popular and important. They were skilled in witchcraft or sorcery, which they learned from another by virtue of kinship or inheritance (Chirino 1969: 300-1). According to a vivid description (Loarca 1903: 173), a shaman performed her/his ritual in front of an idol, "...offered the sacrifice, requesting from the anito whatever the people desired him to ask, and heaping up great quantities of rice, meat, and fish. His invocations lasted until the demon entered his body, when the catalonan fell into a swoon, foaming at the mouth. The Indians sang, drank, and feasted until the catalonan came to himself, and told them the answer that the anito had given to him." A shaman's performance on behalf of a sick person was important, and an invocation could continue as long as the sickness lasted, especially for the people of rank (Loarca 1903: 173; Plasencia 1903: 191). In return, the shaman was given a certain payment for doing the ritual, so they were generally adorned with rich ornaments and well-dressed (Chirino 1969: 301).

In terms of mortuary practices (Anonymous 1979: 341; Chirino 1969: 326-331; Morga 1971: 280; Scott, W. 1994: 238-9; Plasencia 1903: 194-5), after death, the corpse was washed, wrapped in a shroud, sometimes even perfumed and dressed in his/her best garment, and displayed at home for a few days. There were records revealing that the corpse was placed in a wood coffin (Anonymous ibid.; Chirino ibid.). Ancient Tagalogs believed in the returning of the soul of the dead within a few days, and a period of mourning was marked by anticipation of the spirit. After that, however, a ritual was performed to request the soul not to come back to the living world. Another feast was held after the burial to assure the soul safely arrived in the after world.

According to early Spanish records, Tagalogs most commonly buried the corpse in their homes (Chirino 1969: 327-8; Morga 1971: 280; Plasencia 1903: 194). Since their houses were built upon piles and each house stood alone (Morga 1971: 270), the burial ground should be the lower part of the dwelling, as Chirino (ibid.) described: "The most usual burial place they gave to the dead man was his own house, or rather the ground below it, where they dug a big hole in which they placed the coffin. They left the hole open, surrounded by a fence, and there left the food that they had brought him." However, they also buried corpses in the fields (Chirino ibid.). There is no record showing they had a separate cemetery. The deceased was buried with a variety of goods, depending on the person's status, ranging from trade ceramics to jewellery and weapons. It is not clear from early Spanish documents how ancient Tagalogs constructed their graves or other details about the interments.

There is no clear record showing variation in funeral ritual and burial practice among pre-Hispanic Tagalogs in terms of sex, age, type of death, or social status. However, it was mentioned that sometimes the chief was treated in a special manner, as Plasencia (1903: 194-5) described: "...if he were a chief, he was placed beneath a little house or porch which they constructed for this purpose. Before interring him, they mourned him for four days; and afterward laid him in a boat which served as coffin or bier, placing him beneath the porch, where guard was kept over him by a slave" (see also Chirino 1969: 327). Sometimes, especially if the dead had been a warrior, slaves were often interred as a retinue with their master (ibid.).

Secondary burial was practiced as well, especially among members of the ruling class, *maginoo* (Scott, W. 1994: 239; cf. Morga 1971: 280). The bones were unearthed,

placed in a container (jar or chest), and kept in the house, as if the dead was living and present.

Material culture of trade ceramics and earthenwares

In the preceding sections, an ethnohistoric background is provided in order to comprehend the southwest Luzon society in late protohistory/early Spanish period. While this research is based on the analysis of trade ceramics and earthenwares, the following section focuses on how pottery was integrated into Philippine society. There are abundant ceramic discoveries, archaeologically; however, textual evidence is relatively few in recording the uses of pottery in their everyday life. Those records also bias of certain perspectives, such as trade and ritual activities. In any case, they reveal, at least partly, the material culture of trade ceramics and earthenwares in the protohistoric Philippines, which provides a useful comparison with archaeological analysis.

In terms of the quantity of documentary records, pottery found in trade contexts comprise the majority. For instance, Europeans' first contact with southwest Luzon was closely related to trade ceramics. When the Spanish sailed from Cebu toward Manila in 1576, they captured two Chinese ships on the water between Mindoro Island and Calatagan Peninsula, Batangas, southwest Luzon. Both ships were full of cargo, with trade ceramics comprising the majority: "decks of both vessels were full of earthen jars and crockery; large porcelain vases, plates, and bowls; and some fine porcelain jars, which they call *sinoratas*. They also found iron, copper, steel, and a small quantity of was which the Chinese had bought" (Anonymous 1903b: 76).

Abundant records have been found in early Spanish documents which mentioned how common it was to have trade ceramics on the list of long-distance

maritime trade.[4] Actually, centuries before Europe's first encounter with the Philippines, the Chinese had already noticed that trade ceramic was a type of popular commodity in this island world (Chao 1225, in Wu 1959: 89-106; Wang 1349, in Wu 1959: 108-111). Moreover, from early Chinese descriptions, the protohistoric Philippines were seen as having active consumers with their own tastes and preferences in trade ceramics. In particular, Wang Ta-yuan (ibid.), in his famous travel record Tao-I-Chih-Lio (A Synoptic Account of the Islands and their Barbarians), gave us a vivid description of how specific types of trade ceramics were favoured in different places of the Philippine Archipelago: people of San-Tao preferred bowls of blue or white flower pattern; the Chinese porcelain used in trading in Ma-yi was the water jar of Chu-Chou; and the Su-Lu people liked Chu-earthenware.

Trade ceramics were not only one of the most significant imports exchanged into major coastal societies in the lowland Philippines, they were also further traded to other communities or even other maritime merchants. The best example was the famous "Luzon jar" trade between many Luzon peoples and Japanese merchants (Morga 1971: 262). "Luzon jar" was actually a general term referring to a group of medium-sized stoneware jars, often in brown glaze, with mixed provenances including South China and many mainland Southeast Asian resources (Guy 1986: 62). These jars became very popular in Japan, and, from the 16th centuary onwards, were used in the Japanese tea ceremony for storing tea leaves and for displaying in the tea room. Thus, Japanese merchants searched for these jars "especially in the provinces of Manila, Pampanga, Pangasinan, and Ylocos" and, according to Morga (ibid.), "The natives... sell them to

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[4] For example, in the index of Blair and Robertson's (1903-9) mega collection of the pre-20th century documents of Philippines history, items referred to trade comprise the first majority, nearly half of them.

the Japanese for the best possible price and they are diligent in seeking them out for the sake of the profit to be made."

Also, inter-islands bartering had long been recognized in early Chinese records (Chao 1225, in Wu 1959: 92-3): "...the barbarian customers transport the goods to other islands to be disposed of. As a rule, they begin to come back in eight or nine months' time, using what goods they have obtained in exchange (for Chinese goods) to repay the overseas traders...For these the Chinese barter with their porcelain ware, ...etc." Moreover, as reflected in archaeological investigations (Bacus 1995), it was not only trade ceramics exchanged throughout the inter-island networks in the Philippines, but also certain types of earthenwares, especially those highly decorated items which could have represented elite status.

In addition to the trade and barter context, pottery also played an important role in ritual activities. First of all, pottery were often used as the containers of food offerings. For example, in memory of their dead: "...at several points along the Pasig River, porcelain plates were set out with offerings by descendants who trafficked along that route" (Scott, W. 1994: 237). This type of offering practice, using both trade ceramics and local earthenware pots, was not only performed for their ancestors, but also presented to "miserable dead", such as wretched people in the river and the sea (Chirino 1969: 298; Colin 1903: 71). Moreover, they also adored *anito* in forms of stones, reefs, trees, etc. by the same ritual practice (Chirino ibid.). According to records (Aduarte 1903: Vol. 31: 145-6; Chirino ibid.; Colin ibid. Scott, W. ibid.), the ritual of offering food to the dead and other *anito* was not limited to the Tagalog of southwest Luzon, but was broadly practiced among many coastal communities in Luzon and the surrounding islands.

Pottery was not only used as containers for food offerings, but also for other purposes in rituals. For example, when the shaman performed the sacrifice, pottery was used as a musical instrument by beating on porcelain vases with a small stick (Artieda 1903: 199).[5] A case from Mindanao mentioned that an earthenware pot was used to contain some type of burning aromatic in front of wooden idols (Chirino 1969: 300). In another case from the Pangasinan people,[6] pottery, especially stoneware jars, was also used for making and storing the liquor, often made from sugarcane, which was important in their rituals and feasts (Aduarte 1903: Vol. 30: 243).

In terms of mortuary practice, trade ceramics were on the list of valuables buried with the dead, often along with fine clothes and gold jewels, according to the dead person's wealth (Artieda 1903: 199; see also Anonymous 1903a: 139 for the case in Cebu). There was also a record showing that a Spanish soldier dug up an ancient burial in Batangas and unearthed trade ceramics. It is worth noticing that compared to other ritual contexts, only trade ceramics were recognized as grave goods in the mortuary context.

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[5] Unfortunately, Artieda did not point out specifically where this ritual behaviour took place. He wrote only "in every port...," which infers this was quite popularly practiced.

[6] The Pangasinan lived in the coastal area of Lingayen Gulf, to the north of Manila Bay. They were also heavily involved in trading with Chinese and other maritime merchants. The Pangasinan was a more warlike people than the Tagalog, but both peoples were quite similar in many socio-cultural perspectives (Scot 1994: 248-9).

CHAPTER FOUR
MORTUARY DATA FROM SEVEN CALATAGAN CEMETERIES

This chapter presents the archaeological evidence from Calatagan Peninsula, which forms the dataset for the analysis of the social uses and social values of trade ceramics in mortuary contexts in the following chapters. Approximately 1100 interments with more than 2400 grave goods from seven sites in Calatagan are included in this study. The content and assemblage of grave goods indicate they all belong to the same period between the 15th and 16th centuries AD. All sites were excavated during the late 1950s and 1960s. These sites still constitute the largest assemblage of trade ceramics archaeologists can access and analyse today (except for recent information from underwater sites), and thus provide us with the most important information on trade ceramics for the whole Philippine Archipelago.

The information from the seven sites is inconstant in quality. Kay Tomas and Pulong Bakaw, both located in central Calatagan, constitute the main body of data for analysis. They both have published reports and the original burial data are kept at the National Museum of the Philippines (NMP). Together, they supply the richest archaeological information for this research: number, type, and location of each grave good for every burial with skeleton information, and the spatial distribution of burials at each site. In addition to these two main sites, there are 13 other sites along the coast of Calatagan Peninsula (see Figure 4-1). NMP kept most of the original excavation records, although the data quality is poorer than for the two main sites. This research selected five of them to study – Talisay, Karitunan, Punta Sunog, Palapat, and Santa Ana – as these were less disturbed by private looting and had more burials which could be used

in quantitative analysis. Together, the seven sites provide a multi-site, region-wide database for mortuary analysis, which will increase the usefulness of information from the two main sites and provide an important means for distinguishing site specific and region-wide patterns (O'Shea 1995: 126-8).

This chapter first gives a brief archaeological research history of the Calatagan Peninsula, which is mainly based on the excavation of Kay Tomas and Pulong Bakaw. The next section discusses the background and selection of burial materials, especially the principles in managing mortuary information. Then, the following section describes the mortuary data from the seven sites. A comparative discussion and summary section will be given at the end of this chapter.

Figure 4-1 Location of key sites in Calatagan Peninsula, SW Luzon (from Main and Fox 1982: map 1)

ARCHAEOLOGICAL RESEARCH IN CALATAGAN

Calatagan Peninsula, approximately 100 kilometres south of Metro Manila, is a small finger of land situated on the southwest part of the large peninsula of Batangas in southwest Luzon (Figure 4-1). Its southern part is divided into two smaller strips of terrain, and most archaeological sites have been discovered on the western one. This smaller western peninsula adjoins the South China Sea to the west, Pagaspas Bay to the east, and Verde Island Passage to the south which is an important channel separating the islands of Luzon and Mindoro and connecting the South China Sea and the Visayas Islands.

The peninsula averages approximately 2 kilometres in width and 5.5 kilometres in length. It is a plain with rolling terrain in its northern part, and relatively rugged and hilly terrain in the southern part. The peninsula averages 30 metres above mean sea level in elevation, and the highest hill is about 220 metres (MPDC 1994 quoted in Bautista 1995: 5). Broad reefs surround the peninsula, except for the rugged narrow tip in the south. Two channels, one along the east and west coast respectively, and both located at the central part of the peninsula, break through the coral reefs and allow sailing by small boats. In Fox's view (1959: 331-2), both channels could have provided easy access to land and to the open sea, which might have been important for the pre-Spanish period trade. A series of sites on the west coast are near the channel, and the major site on the east coast is found on a cliff above the channel.

Calatagan Peninsula, and the whole Batangas Province in general, was described as "the most important archaeological area yet discovered in the Philippines" by Beyer in the late 1940s (Beyer 1947: 243). Accidental discoveries at Kay Tomas were noted

by local residents while clearing land for shifting cultivation from the 1920s onwards (see Fox 1959: 338, footnote 9). Beyer reported the discovery as:

> ...there was partly exposed an ancient pre-Spanish burial ground of the 15th and 16th centuries – most of the graves containing whole porcelain pieces, jewelry, and utensils, as well as fairly well-preserved skeletons. In certain cane-fields, and in another area where the ground was being smoothed for a polo-field, the middens of two or more old village sites were also exposed. Here, in addition to much pre-Spanish material, there were also found Spanish-period objects (including coins) of the 16th and 17th centuries. Chinese coins of the Ming dynasty were also found. Most of the porcelain ware is undoubtedly of the 15th century, although some 14th and 16th century material is also in evidence (both Chinese and Sawankhalok types being found). Glass bracelets and beads predominate among the jewelry; also several gold objects are said to have been sequestered or stolen by the workmen. (Beyer 1947: 244-5)

In 1940, Olov R. T. Janse, a Swedish archaeologist who was under the sponsorship of the Harvard-Yenching Institute, carried out excavations on three sites: Pinagpatayan, Pulong Bakao (i.e. Pulong Bakaw) and Kay Tomas. His initial purpose was to understand the early Ming ceramics which were then probably the least known of all later Chinese wares (Janes 1944: 35-7). He excavated a total of 66 graves in three sites, 29 graves in Pinagpatayan, six in Pulong Bakaw, and 31 in Kay Tomas.[1] His observations can be summarised as follows:

> The funerary deposits contained chiefly ceramics, which can be divided into three principal groups:
>
> 1. Chinese ceramics imported from China proper (dishes, bowls, jarlets, etc.). Blue and white predominate.
> 2. Chinese ware, imported from Siam, probably from the kilns of Sawankhalok, founded by Chinese ceramists in 1350. The category comprises glazed bottles, small jars, toilet-boxes, etc.
> 3. Native red ware, especially vases and bowls, sometimes decorated with incised and impressed geometric patterns. One type of vase, almost biconical in shape, is provided with two opposing spouts.
>
> Besides ceramics we found earthenware spindle-whorls and net-sinkers, beads of carnelian

[1] Janse's work is not taken into account in this research since he only provided a very brief report of the result at Kay Tomas.

> and other material (glass, rock-crystal, etc.), bracelets of glass (or glasslike material), a few objects of horn, an iron dagger, etc. (Janse 1941: 259)

Wilhelm G. Solheim also carried out excavation at two sites in Calatagan, Punta Sunog and Layon, from December 1952 to January 1953. He did not find any graves but about 4,000 trade ceramic sherds were recovered from test excavations.

The most extensive excavations at Calatagan Peninsula were conducted by Robert Fox and his team from the National Museum of the Philippines during 1958 and 1961. He noted 11 cemetery or habitation sites in total, and a number of minor find locations (Figure 4-1). They are (from north to south and west coast to east coast): Balibago; Talisay; Karitunan; Punta Sunog; Layon, Kay Tomas; Pulong Bakaw; Pinagpatayan; Balong Bato; Palapat; Santa Ana; Parola; Santiago; Punta Buwaya; and Dayap.

The fieldwork by Fox and the National Museum team comprised three seasons. The major work in Calatagan was first carried out at Pulong Bakaw and Kay Tomas, in which 505 graves were opened, from 1 February until 20 May 1958. During this season of excavation, Fox and his team also undertook two other excavations in Calatagan of six test squares in the middens at Punta Buwaya, and of 44 graves at Pinagpatayan #2. After an interruption during late 1958 and early 1960, there was a second season from May to June 1960 working at Santa Ana, Pasong Bato, and Talisay. The third season began in December 1960 and continued till May 1961; sites of Karitunan, Talisay, Santa Ana, Punta Sunog, Palapat, and Parola were excavated.

Fox and his team were heavily involved in the excavation of Santa Ana, Manila from mid-1961 onwards, and did not continue their work in Calatagan. Not until

October 1966 did Mr. Alfredo E. Evangelista of the National Museum undertake another short period of excavation at two of the sites, Punta Buwaya and Santiago.

There has been no archaeological fieldwork in Calatagan Peninsula since the mid-1960s. A new Calatagan Archaeological Project was proposed by the National Museum in 1994 (Ronquillo 1994), a joint work with the Japanese archaeologist, Hidefumi Ogawa, an expert on trade ceramics study in Southeast Asia. Archaeological exploration and test excavation were undertaken mainly along the west coast of Calatagan Peninsula, in the Lian-Calatagan boundary (Bautista 1995), but the resulting data are not yet available for use in this thesis.

SELECTION OF MATERIALS

Background of burial data

As discussed in the preceding introductory and theoretical chapters, this research is primarily a study of the social significance of trade ceramics at a specific social setting (as grave goods in mortuary practices), not a complete survey of the political economics of trade ceramics nor a general study of protohistoric Luzon society. Other than trade ceramics, local earthenware vessels in mortuary contexts will also be examined, using the theoretical perspectives outlined in Chapter Two. This research chooses earthenwares to compare with trade ceramics because: first, their physical quality (ceramic) and type (vessel) are similar and occur in comparable quantity; secondly, they should both be arranged by mourners, like gifts or ritual utensils, but might not be personal possessions (see Barrett 1994: 63); and third, previous interpretations considered there was a superior-inferior relationship between trade ceramics and earthenwares on which a picture of the pre-Hispanic Philippines was based; thus it is worth examining this point.

Nature of the sites

The seven sites are in close proximity, and have similar mortuary practices (i.e. in grave structure, body treatment, and grave goods content), which allow comparisons to be made regarding the social use of trade ceramics. In terms of the nature of the sites, Fox (1959: 341-2) states, at least for Kay Tomas and Pulong Bakaw, two reasons to interpret each cemetery as an intentionally systematic arrangement of burials. First, there were very few graves cut into another, and second, graves possibly had some form of marker: shells, giant clams or chunks of coral. Fox believed there were at least two types of grave markers: The first – giant clams (*Tridacna gigas*) or chunks of coral – was placed near the surface of the grave, or both were placed above the skeleton, often above the chest area. According to Fox, the association of these items and graves was quickly recognized by local workers during the excavation. The second type was the presence of post-holes around the graves. Fox suggested that these were left by some type of superstructure over each grave. Their irregular pattern suggested that the superstructure was rebuilt with new holes dug and new poles erected when the old ones decayed.

However, there were indicators to suggest these interments were located within residential areas: hundreds of pottery sherds were found on the surface, and some shell middens were encountered as well. Fox preferred to see these phenomena as the results of mortuary rituals held at cemeteries: sherds were from pots to hold offerings, and middens were the result of feasts (Fox 1959: 342). On the other hand, many early Spanish accounts suggested that ancient Tagalogs buried their dead beside houses or fields (see Chapter Three). Thus, we cannot yet confirm if these interments were at a cemetery located apart from settlements, or if they were within residential areas.

Problem of dating

Nowadays, most Southeast Asian scholars agree that these Calatagan sites belong to the same period between the 15th and 16th centuries AD (Addis 1970; R. Brown 1988, 2004; Guy 1986). However, since there was no absolute dating conducted, the dating was based by the content and assemblage of grave goods, especially by trade ceramics. It is, therefore, helpful to understand how this dating was done.

In the 1940s, Olov Janse gave little reference to the dating of trade ceramics found in Calatagan, other than the vague idea that they belong to the late 14th century and beyond (Janse 1941: 259). Fox first suggested the trade ceramics found in Calatagan sites were between the late 14th and the end of the 15th century, with a few dating into the early 16th century. Thus, he emphasised these were the 15th century sites, as shown on his book title. His dating of trade ceramics was actually diagnosed by Beyer:

> With the exception of one Sung stoneware jar, possibly an heirloom, all of the Chinese pottery recovered in the graves has been dated by Professor Beyer as belonging to the period from the late Yuan Dynasty (1280-1368) to the end of the 15th century or early Ming, embracing what Beyer has called the "transition period" in which decorations in cobalt blue or copper red under the glaze equal, then replace, the characteristic early Ming monochromes or single-color glazes. As the Chinese, Annamese and Siamese potteries were found in association in single graves, this large collection, when thoroughly studied, will provide new data on the types of trade potteries reaching the Philippines in the late 14th and 15th centuries (Fox 1959: 326-327).
>
> Significantly, no sites with trade pottery of Sung date (960-1279) have been discovered, nor sites with the diagnostic pottery of the 16th century, such as Chia Ching (1522-1566) and Wan Li (1573-1619). All the sites, therefore, may be dated as falling into the period between the late 14th century and the end of the 15th century or the early part of the 16th century (ibid: 334).

The Beyer-Fox dating roused contrasting responses among Southeast Asian archaeologists and art historians. On the one hand, the Beyer-Fox dating had been accepted not only by Filipino experts (Loscin and Locsin 1967), but even influenced

other Southeast Asian scholars' works, for example, Tom Harrisson's (1967) work on ceramics found in Borneo, and Charles Spinks' (1965) work on the history of Thai ceramics.

On the other hand, however, the Beyer-Fox dating was criticised as unreliable and considered to be too early. Kamer Aga-Oglu (1962), in her article on the Ming porcelain found in the Philippines, instead ascribed many of the blue-and-white and enamelled wares to the 16th century. John Addis further commented that "...Calatagan material contains nothing earlier than the late fifteenth century and some material at least as late as the mid-sixteenth century. Calatagan is essentially not a fifteenth century but a sixteenth century site" (Addis 1970: 17).

It is now clear that these scholars had only a limited knowledge of the ceramic industry in South China and in other Southeast Asian countries. The 1950s and 1960s saw the emergence of quantities of new discoveries and studies, and ceramic experts were busy digesting and arguing from this new evidence. In the past two decades, underwater archaeology has revealed a clearer picture of trade ceramics as cargo in situ (see R. Brown 2004), and it supports that the majority of trade ceramics in the Calatagan sites should be ascribed to the 15th and 16th centuries.

Collections and records

All these sites were excavated during the late 1950s and 1960s. These sites still constitute the largest assemblage of trade ceramics archaeologists can access and analyse today (except for recent information from underwater sites), and thus they provide us with the most important information on trade ceramics for the entire Philippine Archipelago. However, archaeological information from these seven sites is quite variable in quality, and can be divided into two groups: Kay Tomas and Pulong

Bakaw, which both share better information than the other five sites -- Karitunan, Palapat, Punta Sunog, Santa Ana, and Talisay.

The sites of Kay Tomas and Pulong Bakaw are the most systematically excavated late protohistoric burial sites which contain trade ceramics among their grave goods. Both sites were almost completely excavated by trained anthropologists, only a small part was destroyed by pot-hunting and construction, and the sample sizes make them manageable and suitable for quantitative methods.

There are many resources which can help in reconstructing detailed mortuary information for these two sites. Fox (1959) first published a report for these two sites, and, with Dorothy Main (1982), published a book on the typological analysis of earthenwares. There are also other related data files kept at the National Museum of the Philippines: a folder of drawings of each burial which exist for more than 90 per cent of the burials. Each drawing presents the body position and the location of each grave good, as well as some basic information on the burial such as depth, width, soil condition, body orientation, age, tooth-filing, and sex (if it was identified). There is also a copy of the data sheets of the burial analysis made by Fox himself, which can be cross-checked with the drawings; and files of earthenware and trade ceramic analysis.

Burial samples from the other five sites in the Calatagan Peninsula are smaller than either Kay Tomas or Pulong Bakaw, and with incomplete available materials. There were no drawings of cemetery layout for any of the five sites. Most of the burials were not drawn, and many of them do not have detailed data for identifying ceramic vessel types and locations. Nevertheless, analyses of archaeological information from these five sites will contribute a regional, comparative perspective to protohistoric

Luzon mortuary practices, and enable examination of the possible differences in the social use of trade ceramics among these cemeteries.

Structure of burial data

Burial information from the seven Calatagan cemeteries are presented in the following sections, which are based on the mortuary database presented in Appendices One to Seven.

Types of interment

Although more than 90 per cent of the interments at the seven Calatagan cemeteries received very similar treatment and can be seen as the same burial type, the variety of mortuary practices was much more complicated than Fox's description.[2] In this research, all interments will be classified in a systematic framework, and not on an ideal typology. According to the quantity of human remains inside a grave pit, all interments can be divided into three types: single burial, multiple grave with more than one individual, and non-skeleton interment which contained only artefacts. Disturbed or looted burials are excluded from this study. Details of each type and sub-type are provided below.

[2] Fox only roughly discussed different types of burials in his report (Fox 1959: 347-52), and did not treat them in a systematic framework.

Single human remain	Inhumation	Supine position	Common inhumation*
			Headless supine burial
		Flexed position	Flexed burial
		Prone position	Prone burial
			Headless prone burial
		Semi-flexed position	Semi-flexed burial
		Skull-only	Skull-only grave
	Jar burial		Jar burial
Multiple human remain	Multiple inhumations	Multiple skeletons	Multiple common grave
			Common-headless grave
			Common-semi-flexed grave
			Multiple semi-flexed grave
		Skeleton + skull	Common-skull grave
			Headless-skull grave
			Common-headless-skull grave
		Multiple skulls	Multiple skull-only grave
	Inhumation + Jar burial		Common-jar grave
			Headless-jar grave
			Jar burial-bundle grave
	Multiple jar burials		Multiple jar burials
No human remain			Non-skeleton interment

Table 4-1 Types of interments at seven Calatagan sites (*Terms in this column are used in the text).

Single burials are divided into inhumation or jar burial. Single inhumations comprise the main type in all Calatagan burials. No coffin was used, and most graves were interred within calcareous soil. This type of soil made the preservation of metal or organic materials difficult. Calcareous soil mixed with clay also formed in certain areas of multiple sites, and this mixed soil helped in identifying the graves. As Fox (1959: 338) pointed out, "It was merely necessary to remove the shallow top soil and scrape the 'clay' in order to establish the graves. The marked distinction between the colour of the grave-fill and the 'clay' was readily discernible, and provided an outline of the graves as well as other cultural features."

Inhumations can be further classified, according to the body treatment, into supine, flexed, prone, semi-flexed, and skull-only graves. Finally, differently positioned inhumations can be divided into common complete skeleton burial or headless burial. Thus, "common inhumation" refers to single complete skeletons buried in a supine

position. Some slightly disturbed burials, but still recognizable as single, supine skeletons, are also included here. Because common inhumation comprised more than 90 per cent of the interments, all other burials, including multiple graves, can be seen as "uncommon."

Headless supine burials comprised the second largest group of burials. Headless burials are those without their skulls. There are two possibilities for their headless condition: "head-taking" for those cases where the skeleton shows damage to the vertebrae of the neck such as from head hunting; and "head-missing" for those where the skeleton had "the skull missing but the first cervical vertebra or atlas [was] present" (Fox 1959: 351), which indicates removal of the skull after death or some period of burial, since the head of a living person cannot be removed without damaging the vertebrae of the neck. However, the difference between head-taking and head-missing was only recognized at Kay Tomas and Pulong Bakaw; therefore, the general category of "headless" will be applied to most of the relevant cases.

Flexed position burial refers to the inhumation lying in a supine position for the upper part of the torso, but with legs flexed and bent. Flexed burials also had both hands bent up toward the head. Prone position burials, where individuals were placed on their stomachs instead of their backs, are few in Calatagan. Semi-flexed position burials are those inhumations interred lying on their side, with their skull either facing right or left, and their lower limbs semi-flexed. Finally, graves with skull only are also encountered in Calatagan.

Jar burials are those where human remains were placed inside large trade ceramics (most were Chinese stoneware) or earthenware jars. Most contained infants, and a few contained young children. The bodies were placed in a supine position with

the head towards the mouth of the jar. As the body was larger than the mouth of the burial jar, the jar was often broken to admit the body and then the pieces were placed in their original positions. The mouth of the burial jar was orientated in the same direction as most of the common inhumations. In some instances, Chinese bowls or plates were used as covers for the jars. Most of these burials had no other grave goods.

In addition to single burials, there were also multiple graves encountered in Calatagan cemeteries. Though there was no coffin used, it was not difficult for the excavators to identify an interment because the grave-filling was easily differentiated from the original soil. Multiple graves comprised a variety of types of burials: two or more inhumations or jar burials, as well as inhumation and jar burial together. Furthermore, there are three sub-types of multiple inhumations: 1) two or more skeletons in one pit (multi-skeleton graves); 2) one or more skeletons buried with an extra one, or more, skulls (skeleton-skull graves); and 3) two or more skulls buried together (multiple skull graves).

For each burial, the skeleton information from the original record available includes: orientation, age, sex, and tooth-filing. Orientation is the cardinal direction of the skeleton's head. Most of the original records used angle to record the orientation. To simplify the orientation information, I employ an eight-direction system: North (337.5° to 22.5°), Northeast (22.5° to 67.5°), East (67.5° to 112.5°), Southeast (112.5° to 157.5°), South (157.5° to 202.5°), Southwest (202.5° to 247.5°), West (247.5° to 292.5°), and Northwest (292.5° to 337.5°).

In terms of age, Fox (1959: 344) applied a four-age-group system to categorize the age of the skeletons: adult, 17 and plus years old; juvenile, 11-16 years old; child, 3-

10; and infant. When possible, some original records also identified young adult or old adult, and even the age of the individual.

Sex was difficult to recognize for the Calatagan burials. According to Fox's experience during fieldwork (ibid: 353), "the criteria which is used to determine the sex of Caucasoid skeletons did not appear to fit the Calatagan remains. The innominates were invariably too eroded for evaluation, and the physical characteristics of the skull, such as the prominence of the supraorbital ridge, the size of the mastoid process, and so forth, did not vary markedly from skeleton to skeleton."

Tooth-filing was commonly found among the individuals buried in Calatagan. In Fox's description (ibid: 353), there are two types of filing. The most common type is concave on the face of the tooth and square on the biting edge. The incisors were the most commonly filed teeth. In Fox's preliminary observation, teeth filing seems related to age: "The teeth were not filed until the late teens (we encountered only one exception, a juvenile whose age was estimated as 10-12 years). ... The presence or absence of filing was not correlated with any difference in the cultural materials found in the grave and undoubtedly included males and females" (ibid: 353, 355).

In addition to single and multiple graves, there were also interments without human bones but which were identified as such by the ceramic vessels. These might be the remains of rituals or offerings during mortuary practice, as Fox suggested (ibid: 342). He applied ethnographic cases from some non-Christian peoples in the Philippines to propose that the post-holes found around the graves indicated the presence of some form of superstructures over the graves, and there were mortuary rituals performed at the graves and offerings (i.e., food in plates and bowls) placed on the grave beneath the structure. If this interpretation is correct, data on this type of interment provides us with

more information on Calatagan mortuary practices, especially the roles ceramic vessels played in mortuary ritual.

Types of grave goods[3]

At first glance, it is significant that local earthenwares and trade ceramics form the bulk of the grave goods from these cemeteries. Together they comprise about 80 per cent of all grave goods throughout all the sites, and nearly 70 per cent of burials contained at least one earthenware or trade ceramic vessel. Thus, this research uses local earthenware (EA) and trade ceramic (TC) vessels as the two main categories, and classifies other types of grave goods as miscellaneous (MS).

Trade ceramics are imported high-fired, generally glazed pottery objects. Most of them are dishes, saucers, plates, bowls, jarlets, jars etc. Local earthenwares are low-fired and un-glazed objects, and are either made locally or obtained through exchange with nearby groups or those on other islands within the archipelago. Miscellaneous items include all other non-pottery objects: clay, metal, glass, bone, and stone, etc. Detailed discussion of their typologies can be found in Appendices 8 to 10.

For the spatial arrangement of grave goods, Fox created a unique system to code the position of trade ceramics. This system divided the skeleton and its surroundings into 30 positions, and numbered each of them (Figure 4-2). However, 30 body positions are too diverse for analysis, thus this research groups these body positions into ten body parts (Table 4-2): around the head (AH), head (SK), chest (CH), right upper limb (RU), left upper limb (LU), pelvis (PV), between legs (BL), right lower limb (RL), left lower limb (LL), and around the feet (AF).

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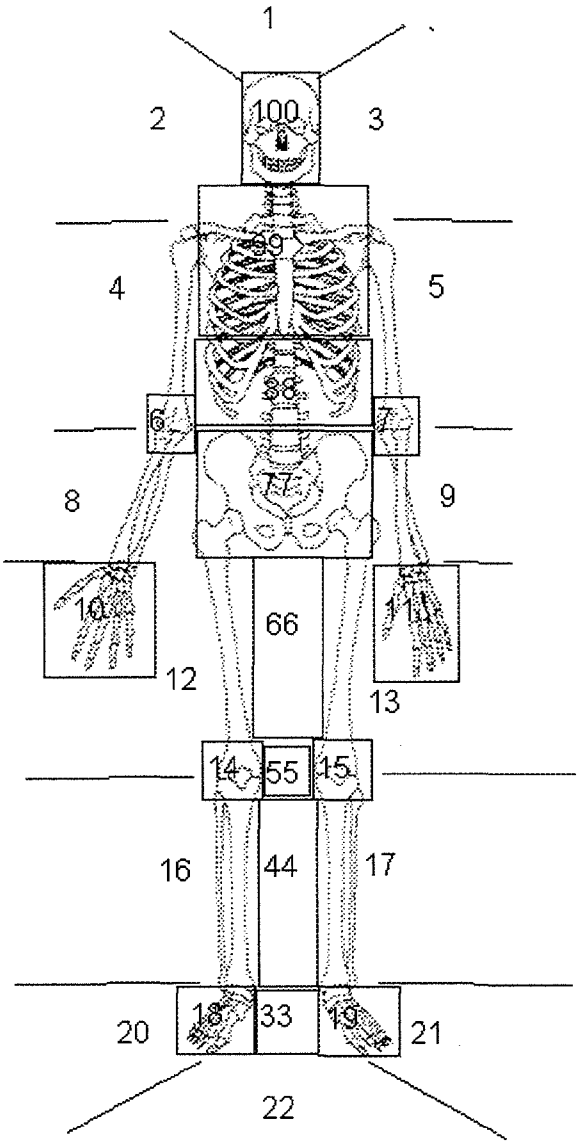
[3] For detailed discussion on the grave goods typology, see Appendix 8, 9, and 10.

In addition, as discussed in the methodology section in Chapter Two, spatial polarity is another significant dimension in approaching the value system of objects. This research further simplifies these body parts into three symbolic dimensions of spatial polarities. For "on/off" dimension, the "on" body parts are SK, CH, RU, LU, PV, BL, RL, and LL, while "off" body parts are AH and AF. In terms of "right/left" dimension, the "right" side contains RU and RL, and the "left" side has LU and LL; both comprise as "side" body parts in contrast to the "central" body parts which include SK, CH, PV, and BL. Finally, for the "upper/lower" dimension, "upper" body parts are SK, CH, RU, LU, and PV, and the "lower" body parts are BL, RL, and LL.



1- Area behind the skull.
2- Area on the right side of the skull.
3- Area on the left side of the skull.
4- Right upper arm (humerus) and its right side.
5- Left upper arm (humerus) and its left side.
6- Right elbow.
7- Left elbow.
8- Right lower arm (radius and ulna) and its right side.
9- Left lower arm (radius and ulna) and its left side.
10- Right hand (carpals, metacarpals, and phalanges).
11- Left palm (carpals, metacarpals, and phalanges).
12- Right upper leg (femur) and its right side.
13- Left upper (femur) and its left side.
14- Right knee (patella).
15- Left knee (patella).
16- Right lower leg (tibia and fibula) and its right side.
17- Left lower leg (tibia and fibula) and its left side.
18- Right foot (tarsals, metatarsals, and phalanges).
19- Left foot (tarsals, metatarsals, and phalanges).
20- Area on the right side of right foot.
21- Area on the left side of left foot
22- Area in frond of two feet
33- Area between two feet.
44- Area between two lower legs.
55- Area between two knees.
66- Area between two upper legs.
77- Pelvic girdle area.
88- Lumbar area.
99- Chest/Shoulder girdle area.
100- Skull.

Figure 4-2 Coding system of 30 human body positions.

Body parts	Around head (AH)	Head (SK)	Chest (CH)	Right upper limb (RU)	Left upper limb (LU)	Pelvis (PV)	Between legs (BL)	Right lower limb (RL)	Left lower limb (LL)	Around feet (AF)
Body position	1, 2, 3	100	99	4, 6, 8, 10	5, 7, 9, 11	77, 88	33, 44, 55, 66	12, 14, 16, 18	13, 15, 17, 19	20, 21, 22

Table 4-2 Reference table between 10 body parts and 30 body positions.

MORTUARY PRACTICE IN CALATAGAN

Kay Tomas (KT)

The Kay Tomas site is located by the seashore (Figure 4-3), where the maximum elevation is slightly over four metres in the east part and approximately two metres on a narrow point in the west. The base level of the site is formed by dead coral which is usually less than one metre in thickness. Most graves were interred within a calcareous type soil composed of fine sand with a high lime content and disintegrated coral.

At the time of excavation, the site of Kay Tomas was bordered by fishponds, as well as by stands of mangrove trees which masked the original form of the land. According to Fox (1959: 338), the landowner described that "the burial site and surrounding area was covered by forest when he first came to Calatagan in 1924. At that time, he began to cut down and burn the trees and bushes, shifting his planting area every three years. He noticed some sherds of porcelains, stonewares, and earthenwares. It was not until 1937, however, when he began to plough the fields (usually twice annually for the successive crops of corn and rice) that he became aware of the fact that his field was over a *libingan* or 'cemetery'."

The area systematically excavated by Fox's team at Kay Tomas is about 400 m^2 and yielded 297 interments.[4] Fox (ibid: 341) estimated that at least 700 individuals were interred in the Kay Tomas cemetery, approximately twice the number at Pulong Bakaw. His estimate was based on Janse's (1944) earlier excavation of 31 graves, and his team's 297 graves, plus a count of the results of private diggings on the site. Fox stated that these were crude minimum estimates because the effects of cultivation and private digging could not be assessed.

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[4] The area is estimated from the site map (Fox 1959, Fig. 3).

The main area of excavation at Kay Tomas surrounded a dead coral knoll, and most of the burials were unearthed on the slopes of this knoll. The following Kay Tomas burial database includes 233 common inhumations, nine semi-flexed position burials, one prone position burial, 18 headless burials, three skull-only graves, seven cases of multiple graves, and ten jar burials, as well as ten non-skeleton interments.

Figure 4-3 Distribution of burials at Kay Tomas, Calatagan, SW Luzon (from Fox: 1959: Fig. 3)

Common inhumations

The skeleton

Two hundred and thirty three burials are categorized as 'common' inhumations at Kay Tomas. In terms of orientation, the most common orientation of the head was towards the south (43.5%, or 93 of 214 cases where it could be determined). The second most common direction was to the southeast (66 cases, 30.8%). Together, these two orientations comprised nearly three quarters of common inhumations (Table 4-3). The next most common direction was the north (24 cases, 11.2%), followed by the northwest (16 cases, 7.5%), and the east (11 cases, 5.1%). The northeast and the southwest had only a single case each. In terms of age, there were 140 adults (62.5%), 33 juveniles (14.7%), 49 children (21.9%), and two infants. Sex was difficult to recognize for the Kay Tomas burials. There were only 17 individuals gender-identified: seven females and ten males. They were all adults, except one female juvenile.

Tooth-filing was regularly found among the adult common inhumations at Kay Tomas: 69 cases of tooth-filing against 16 individuals with no tooth-filing, but there were 55 unrecognisable cases. Due to poor preservation conditions, there were only 11 skulls available to identify varieties of tooth-filing (Table 4-5). The most common pattern (4 cases) is of six teeth filed in the upper jaw and six in the lower jaw (6U6L). Moreover, it appears that there are more teeth filed in the upper jaw than in the lower jaw, though the sample is small. It is difficult to say whether there are sex differences in tooth-filing behaviour. Within 17 sex-recognized individuals, nine male adults and four female adults had their teeth filed.

Grave goods

The 233 common inhumations had a total of 621 items of grave goods, including 263 earthenware vessels, 251 trade ceramic vessels, and 107 miscellaneous goods. Table 4-6 shows that 78% of the burials contained at least one grave good, with earthenware and trade ceramic vessels the most common. Among the three categories of grave goods, respectively, earthenware vessels were the most popular artefacts (about 70% of burials contain one or more earthenwares). Trade ceramic vessels were common as well, with slightly more than 50% of burials having one or more of these ceramics. Miscellaneous items, such as glass and bronze ornaments, iron weapons, and clay spindle whorls, occurred in around 30% of burials.

Among earthenware vessels (Table 4-7), more than one third could not be classified as to their type (type E800).[5] The most common type (E111), accounting for less than one third, had an ellipsoid body shape with everted rim and convex base, and were red slipped and polished. The next most popular type (E112) was the same as E111 except with an indentation around the central base. Type E113 vessels were similar to E112 but were modified by a series of grooves spaced around the circumference of the body. Some types, E114, E116, E117, and E134, were imitations of trade ceramics, of which there were many variations. E114 and E134 were *kendi*-like vessels with one to four spouts.

Trade ceramic vessels (Table 4-8) were fewer in number than earthenwares. The majority of trade ceramics (66% of 254 items) were from China (T1xx). Thai wares (T2xx) comprised nearly 20%, and Vietnamese (T3xx) wares formed only 2%. Among

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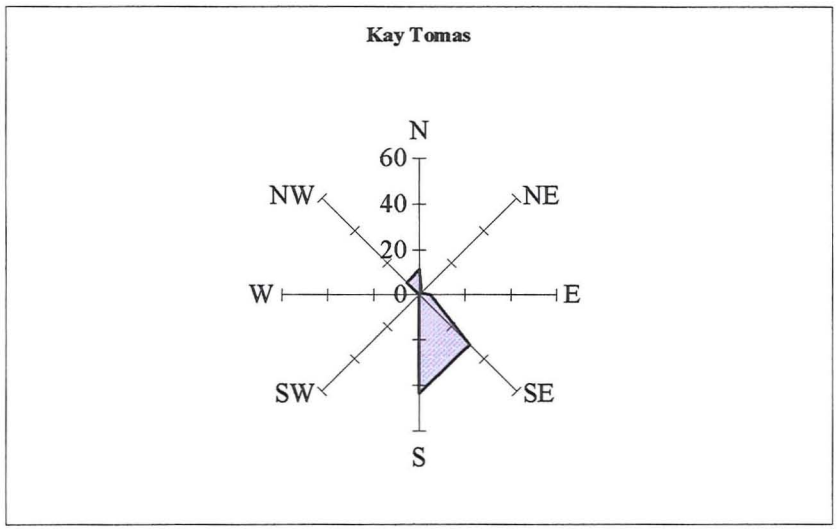
[5] With regard to types of earthenwares, as well as trade ceramics and other miscellaneous items, please refer to Appendices 8, 9, and 10.

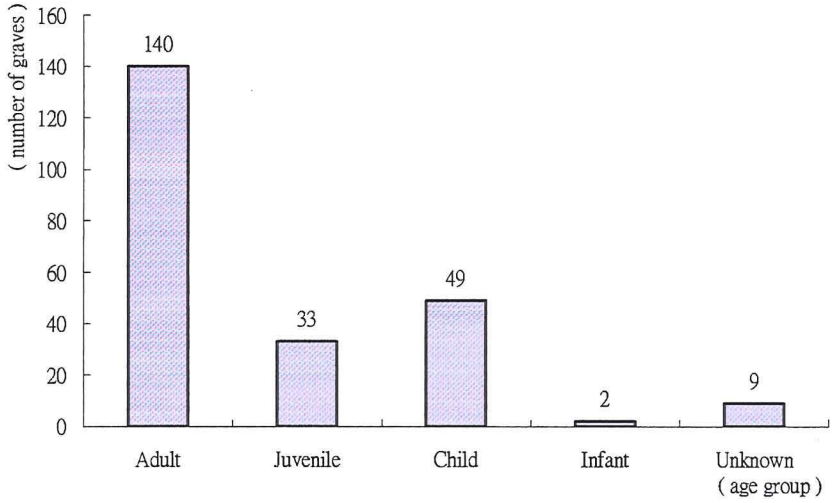
the Chinese wares, blue-and-white wares (T11x) dominated (49.2% of 254), followed by monochrome celadons (T13x, 7.5% of 254). In regards to vessel forms, bowls (Txx1) were the most common (40%), followed by plates (Txx2), jarlets (Txx5), jars (Txx4), and saucers (Txx3). Based on three criteria: provenance, glaze, and form; Chinese blue-and-white bowls (T111) were the most common (24%) type of trade ceramic, followed by Chinese blue-and-white plates (T112, 17%). Chinese celadon bowls and plates were also common. Among the Thai wares, jars and jarlets were the major number of vessel forms.

The miscellaneous category (Table 4-9) includes the other types of grave goods, which occurred in small quantities except for clay spindle whorls of which there were 28.



	N	NE	E	SE	S	SW	W	NW	Unknown	Sum
Count	24	3	11	66	93	1	0	16	19	233
Percentage	11.2%	1.4%	5.1%	30.8%	43.5%	0.5%	0	7.5%		

Table 4-3 Distribution of orientations among common inhumations at Kay Tomas (percentage excludes unknown data).

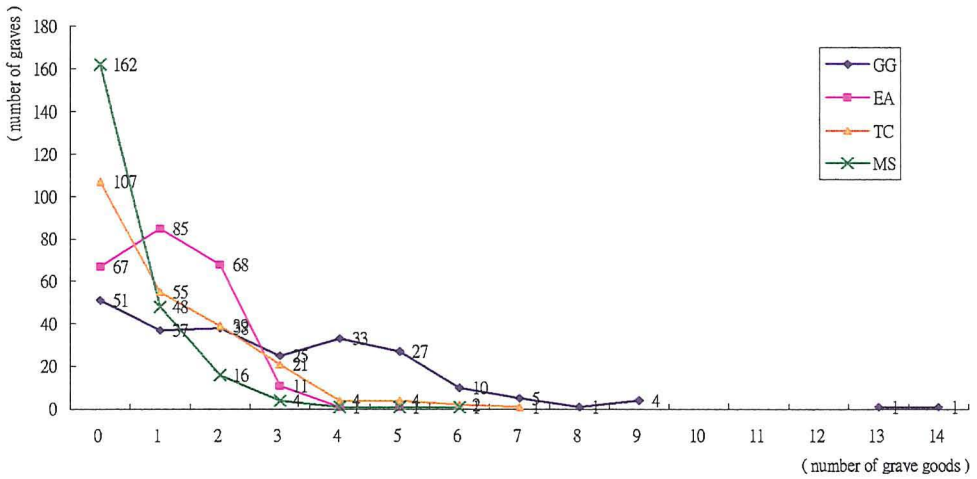


	Adult	Juvenile	Child	Infant	Unknown	Sum
Count	140	33	49	2	9	233
Percentage	62.5%	14.7%	21.9%	0.9%		

Table 4-4 Distribution of age groups among common inhumations at Kay Tomas (percentage excludes unknown data).

Formula*	**Filing ?U4L**	**Filing 6U?L**	**Filing 6U5L**	**Filing 6U6L**	**Filing 8U6L**	**Filing 8U8L**	**Filing 9U6L**	**Filing but no formula**	**No filing**	**No data**
Total	**2**	**1**	**1**	**4**	**1**	**1**	**1**	**58**	**16**	**55**

Table 4-5 Types and total of teeth filing formula among adult common inhumations at Kay Tomas (*U for upper jaw, L for lower jaw, number for total teeth filed).



Count (233)	0*	1	2	3	4	5	6	7	8	9	13	14
GG (621 items)	51 (21.9)	37 (15.9)	38 (16.3)	25 (10.7)	33 (14.2)	27 (11.6)	10 (4.3)	5 (2.1)	1 (0.4)	4 (1.7)	1 (0.4)	1 (0.4)
EA (263 items)	67 (28.8)	85 (36.5)	68 (29.2)	11 (4.7)	1 (0.4)	1 (0.4)						
TC (251 items)	107 (45.9)	55 (23.6)	39 (16.7)	21 (9.0)	4 (1.7)	4 (1.7)	2 (0.9)	1 (0.4)				
MS (107 items)	162 (69.5)	48 (20.6)	16 (6.9)	4 (1.7)	1 (0.4)	1 (0.4)	1 (0.4)					

Table 4-6 Distribution of common inhumations with/without grave goods at Kay Tomas (all count on quantity of common inhumations; *numbers in rows stand for quantity of grave goods; number inside ( ) stands for percentage against total 233 common inhumations; GG: total grave goods; EA: earthenware vessel; TC: trade ceramic vessel; MS: miscellaneous).

Type	E110	E111	E112	E113	E114	E116	E117	E121	E130
Number	2	93	34	24	8	2	2	2	2
%	0.8%	35.4%	12.9%	9.1%	3.0%	0.8%	0.8%	0.8%	0.8%
Type	E134	E221	E800	E801	E803	E804	E831	E930	Total
Number	5	1	43	38	2	3	1	1	263
%	1.9%	0.4%	16.3%	14.4%	0.8%	1.1%	0.4%	0.4%	100%

Table 4-7 Type distribution of earthenware vessels among common inhumations at Kay Tomas.

Type	T100	T101	T102	T110	T111	T112	T113	T114	T115	T119
Number	3	4	1	4	58	46	8	1	2	6
%	1.2%	1.6%	0.4%	1.6%	23.1%	18.3%	3.2%	0.4%	0.8%	2.4%
Type	T123	T130	T131	T132	T133	T144	T161	T162	T163	T164
Number	2	1	12	6	3	1	1	2	1	1
%	0.8%	0.4%	4.8%	2.4%	1.2%	0.4%	0.4%	0.8%	0.4%	0.4%
Type	T200	T201	T204	T205	T209	T301	T303	T304	T900	T901
Number	4	2	15	18	3	1	1	4	7	16
%	1.6%	0.8%	6.0%	7.2%	1.2%	0.4%	0.4%	1.6%	2.8%	6.4%
Type	T902	T903	T904	T905	T909	T945				Total
Number	5	1	3	5	2	1				251
%	2.0%	0.4%	1.2%	2.0%	0.8%	0.4%				100%

Table 4-8 Type distribution of trade ceramic vessels among common inhumations at Kay Tomas.

Material	Type and total (107 items)
Ceramics (M1xx)	28 clay spindle whorls (M111); 1 unknown clay object (M110).
Metal (M2xx)	3 iron spears (M215), 1 iron slag (M217), and 6 unknown objects (M210); 4 brass anklets (M222), 1 brass wire (M229), and 2 unknown objects (M220); 1 golden tooth plug (M249), 1 unknown object (M240); 8 metal spears (M205); 1 metal tool (M208); 5 unknown metal objects (M209).
Glass (3xx)	3 bracelets (M301); 1 anklet (M302); 1 glass slag (M307).
Bone and Shell (M4xx)	9 land animal (pig or deer) bones (M410); 1 fish bone (M420); 11 shells (M430).
Stone (M5xx)	5 stones (M510); 4 stone tools (M512); 2 unknown stone objects (M519).
Unknown (M9xx)	1 bracelet (M901); 3 sets of beads (M903); 4 unknown objects (M900).

Table 4-9 Type distribution of miscellaneous grave goods among common inhumations at Kay Tomas.

Uncommon interments

Beyond the common inhumations, there existed a few 'exceptions' which differed significantly from most common burials. Among these, some of them were those with clear evidence of having suffered from violent behaviour such as a cut wound or missing head. Some of them were treated in different ways such as buried in a

prone position, or semi-flexed position; multiple burials; burial with an extra skull; and skull-only burial. These burials are discussed in more detail below.

Headless supine burials

There were 16 headless supine inhumations at Kay Tomas. Thirteen of them[6] were clearly due to the result of violent "head-taking;" the other three cases[7] were "head-missing."

Orientation of the 13 head-taking burials was either toward the south (6 cases) or the southeast (5 cases). There was only one case each toward the east and west, respectively. In regard to age, it is significant that most head-taking burials were adults (10 out of 13), with only three juveniles. Eight out of 13 cases had grave goods: six burials had 11 earthenware vessels, seven burials had eight trade ceramic vessels, and four burials had five items of miscellaneous goods.

Three head-missing burials were all adults and orientated south. One of them had a coral rock placed at the position of its missing skull; another burial had rich grave goods: two earthenwares, two trade ceramics, and three miscellaneous.

Prone position burial

There was only one burial in a prone position at Kay Tomas (KT-1180). It was a south orientated adult with eight grave goods: two common earthenware pots, four Chinese porcelain vessels, and two animal objects.

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[6] They are: KT-0004, KT-0018, KT-1026, KT-1086, KT-1096, KT-1126, KT-1140, KT-1175, KT-1197, KT-1201, KT-1211, KT-1224, and KT-1229.
[7] They are: KT-1024, KT-1084, and KT-1183.

Semi-flexed position burials

There were nine cases of semi-flexed burials at Kay Tomas.[8] In regard to orientation, the semi-flexed burials were similar to most of the common inhumations with three major directions: south, southeast, and north. Though there were only nine cases, the directions the skulls faced were clear among the semi-flexed burials: seven faced west, one faced southwest, and one faced northeast. Moreover, in regard to left/right placement, the left-side (six cases) was more popular than the right-side (three cases).

From the viewpoint of age distribution, it was more common to place the young in a semi-flexed position: four children and two juveniles versus three adults. Fox (1959: 347) believed that the percentage of the younger generation should be higher, but accurate determination was difficult due to the poor condition of the remains.

Skull-only graves

At Kay Tomas, three cases of skull-only interments were encountered.[9] Two of them were complete skulls and the other one was an incomplete fragment. Both of the two complete skulls were interred very close to other burials: skull KT-0005 was between KT-0003 and KT-0004, and skull KT-0045 was at the right-hand side of KT-0044. There is no information to identify whether these two skulls were interred, together with burials nearby. The third skull (KT-0029) was found mixed with one earthenware and one Thai jarlet.

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[8] They are KT-0049, KT-1031, KT-1049, KT-1075, KT-1120, KT-1124, KT-1177, KT-1189, and KT-1198.
[9] They are: KT-0005, KT-0029, and KT-0045.

Jar burials

Nine jar burials were encountered at Kay Tomas. [10] Eight of them were placed inside large stoneware jars, but only one in a large earthenware jar. Three out of nine stoneware jars had trade ceramics (two bowls and one plate) used as covers. In addition, there were few grave goods in the jar burials: two earthenwares, two trade ceramics, and one metal object were found in three of the burial jars.

Multiple graves

The majority of Kay Tomas graves were single burials, but there were also seven cases of multiple burials.[11] There are three cases of two skeletons buried together in one grave (multiple inhumations grave). [12] KT-1145/1146 was two adults buried together. They were both north orientated, and KT-1146 was headless. KT-1145 had no grave goods, but KT-1146 had two earthenwares and one trade ceramic. KT-1061/1062 and KT-1085/1086 were both adult-child burials. They were either south or southeast orientated, and contained at least one grave good.

There were also three cases of one skeleton with one 'extra' skull (skeleton-skull grave). KT-1128 was an extra skull placed at the feet of burial KT-1127, and KT-1165 was an extra skull placed beside the head of burial KT-1164. Both KT-1127 and KT-1164 were adult, north orientated skeletons with three earthenwares each. However, both cases were close to other burials missing their heads: KT-1127/1128 was close to KT-1126, and KT-1164/1165 was next to KT-0004. Both KT-0004 and KT-1126 were headless burials. Thus, there is the possibility of a mix up. KT-1167A was a skull

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[10] They are: KT-1023, KT-1111, KT-1121, KT-1129, KT-1169, KT-1212, KT-1234, KT-1239, and KT-1249.

[11] They are: KT-1061 and KT-1062, KT-1090 and 1090A, KT-1145 and KT-1146, KT-1185 and KT-1186, KT-1127 and KT-1128, KT-1164 and KT-1165, KT-1167 and KT-1167A.

[12] In Fox's report (1959: 347-8), information for such multiple burials is different: one case of adult-adult burial, two infant-adult burials, one juvenile-child, and one child-infant burial.

placed at the feet of a headless skeleton KT-1167. Even though there was no direct evidence to prove whether the skull was the head of the skeleton, it is unlikely. Two pieces of evidence indicate this was an extra skull because KT-1167 itself was a head-taking case and there was no evidence of this burial being disturbed.

Finally, KT-1090A was a 9-12 years old child buried under infant jar burial KT-1090 (inhumation-jar grave). KT-1090A had a Chinese monochrome bowl on its pelvis. KT-1090 had a Chinese stoneware jar burial covered by a Chinese blue-and-white plate, with two earthenware vessels beside.

Non-skeleton interments

At Kay Tomas, ten non-skeleton interments[13] had eight earthenwares, ten trade ceramics and one miscellaneous item of an animal's lower jaw.

[13] They are: KT-0028, KT-0030, KT-0031, KT-1019, KT-1046, KT-1047, KT-1048, KT-1059, KT-1083, and KT-1089.

Pulong Bakaw (PB)

The site of Pulong Bakaw, located on a small finger of land extending toward the sea, is bordered by fishponds and stands of mangrove trees. The excavated portion (Figure 4-4) was on a narrow and low area with a maximum elevation of less than two meters above sea level. According to a report by the landowner (Fox 1959: 338), the site of Pulong Bakaw "was first cleared by him in 1942, when he planted a crop of *mongo* beans. While ploughing, prior to planting, he uncovered a few trade potteries. Being a fisherman, however, he did not plant another crop, and the site was relatively undisturbed."

The excavated area at Pulong Bakaw is about 340 m^2.[14] Fox estimated that at least 350 individuals were interred at Pulong Bakaw, within an approximately 150 year period (ibid: 341). Resembling Kay Tomas, the burials here were believed to be systematically interred during the use of the site.

After re-checking the original field records, I can confirm there were 145 common inhumations at Pulong Bakaw. The general characteristics of these burials were similar to those at Kay Tomas, except in their orientations. In addition, there were eight semi-flexed position burials, four headless burials, two skull-only cases, seven cases of multiple graves, and four jar burials. Finally, there were 29 non-skeleton interments. Their general features are described below.

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[14] The area is estimated from the site map (Fox 1959: Fig. 2).

Figure 4-4 Distribution of burials at Pulong Bakaw, Calatagan, SW Luzon (from Fox: 1959, Fig. 2)

Common inhumations

Skeletons

The most common orientation at Pulong Bakaw was towards the northeast (Table 4-10). This direction contrasts with the majority of burials at Kay Tomas and most other sites in Calatagan. Sixty-six burials (52.0%) were orientated to the northeast which constituted more than half of the recognizable cases. The second most common orientation, the north, had 32 cases (25.2%). East was the third most common orientation, with 24 cases (18.9%). South orientation had five cases only. The age distribution of 127 recognizable common inhumations at Pulong Bakaw was (Table 4-11): 79 adults (62.2%), 22 juveniles (17.3%), and 26 children (20.5%). The sex of only three skeletons could be ascertained (PB-005, PB-029, PB-153), and they were all adult males. Among 79 adult common inhumations, there were 26 cases with tooth-filing and

only three cases without filing, but 50 individuals were unrecognisable. Among the 26 cases, there are only four skulls available to identify the complete filing formula (Table 4-12).

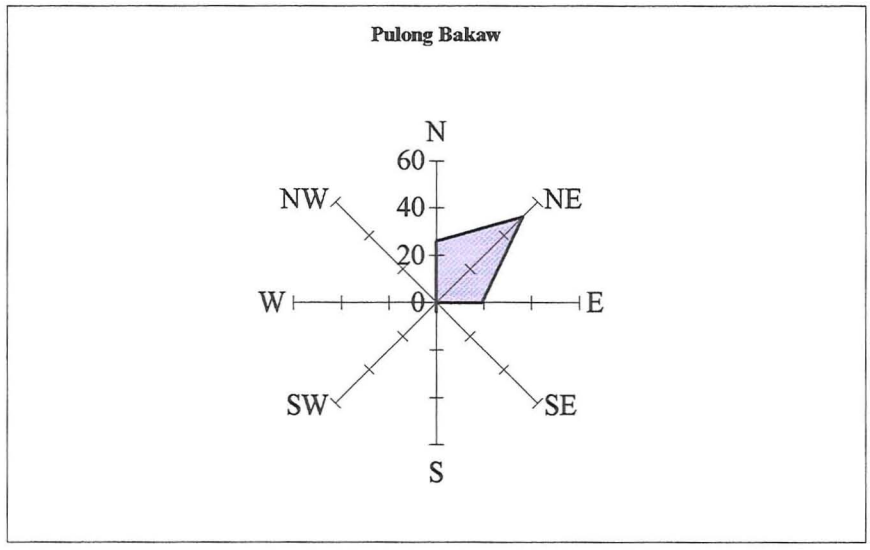
Grave goods

Associated with the 146 common inhumations were 365 grave goods, including 147 earthenware vessels, 160 trade ceramic vessels, and 58 miscellaneous goods. Table 4-13 shows that more than three quarters of common inhumations (112 cases, 76.7%) had at least one grave good. Although the number of earthenware vessels (147 items) was slightly less than that of trade ceramics (160 items), their distribution was more even among the burials. There were 92 common inhumations (63.0%) which contained earthenwares, while 77 burials (52.7%) had trade ceramics. Only 37 burials (25.3%) had miscellaneous items, which totalled 58.

The most common earthenware (Table 4-14) was type E111 (36 items), which had 24.5% of all types. The next popular type was E112 (18 items, 12.2%). At Pulong Bakaw, nearly half of the earthenwares (73 items, 49.7%) were classified as unknown type E800.

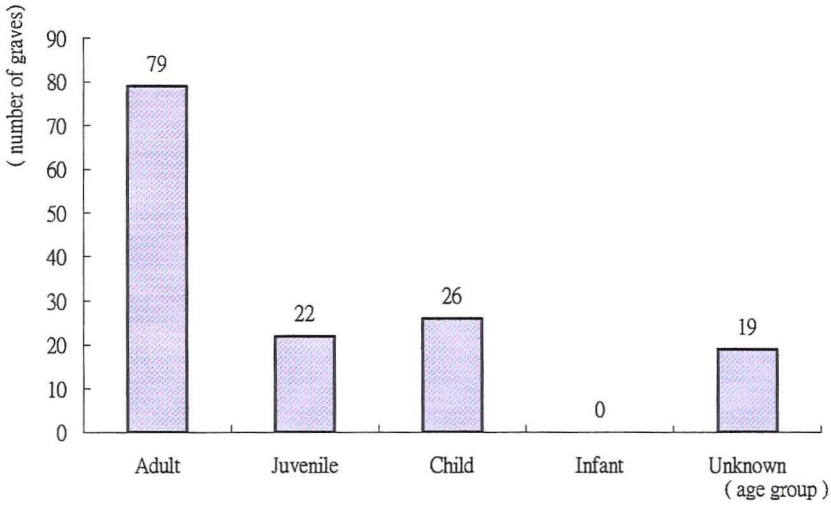
In regard to the provenance of trade ceramics (Table 4-15), Chinese wares (T1xx) were the majority (131 items, 81.9%), followed by Thai wares (T2xx, 21 items, 13.1%), then those from unknown sources (T9xx, 6 items, 3.8%), and finally the Vietnamese wares (T3xx, 2 items, 1.3%). The most common Chinese wares, in regard to the glaze, were blue-and-white (T11x, 77 items, 58.8% of Chinese items), followed by monochrome celadons (11 items, 8.4%), stonewares (7 items, 5.3%), and whitewares (4 items, 3.1%). Considering the vessel forms, the Chinese blue-and-white bowl (T111, 38 items) was the most common type.

The majority of miscellaneous items (Table 4-16) were clay spindle whorls, of which there were 28. There was only one iron spear recognized. Three brass locks were all from the same burial (PB-123).



	N	NE	E	SE	S	SW	W	NW	Unknown	Sum
Count	32	66	24	0	5	0	0	0	19	146
Percentage	25.2%	52.0%	18.9%	0	3.9%	0	0	0		

Table 4-10 Distribution of orientations among common inhumations at Pulong Bakaw (percentage excludes unknown data).

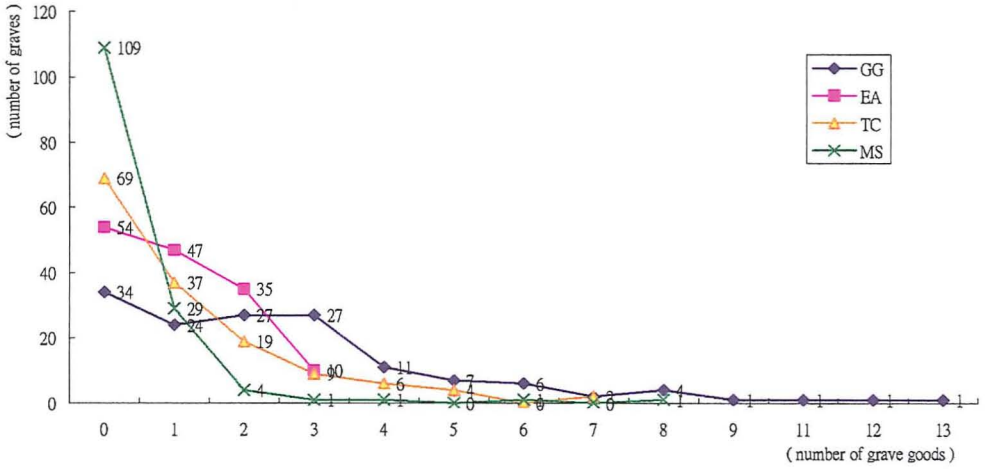


	Adult	Juvenile	Child	Infant	Unknown	Sum
Count	79	22	26	0	19	146
Percentage	62.2%	17.3%	20.5%	0		

Table 4-11 Distribution of age groups among common inhumations at Pulong Bakaw (percentage excludes unknown data).

Formula*	Filing 6U?L	Filing 6U6L	Filing 8U6L	Filing but no formula	No filing	No data
Total	2	1	1	22	3	50

Table 4-12 Types and total of teeth filing formula among adult common inhumations at Pulong Bakaw (*U for upper jaw, L for lower jaw, number for total teeth filed).



Count (145)	0*	1	2	3	4	5	6	7	8	9	11	12	13
GG (365 items)	34 (23.3)	24 (16.4)	27 (18.5)	27 (18.5)	11 (7.5)	7 (4.8)	6 (4.1)	2 (1.4)	4 (2.8)	1 (0.7)	1 (0.7)	1 (0.7)	1 (0.7)
EA (147 items)	54 (37.0)	47 (32.2)	35 (24.0)	10 (6.8)									
TC (160 items)	69 (47.3)	37 (25.3)	19 (13.0)	9 (6.2)	6 (4.1)	4 (2.8)	0	2 (1.4)					
MS (58 items)	109 (74.7)	29 (19.9)	4 (2.8)	1 (0.7)	1 (0.7)	0	1 (0.7)	0	1 (0.7)				

Table 4-13 Distribution of common inhumations with/without grave goods at Pulong Bakaw (all count on quantity of common inhumations; *numbers in rows stand for quantity of grave goods; + number inside ( )stands for percentage against total 152 common inhumations; GG: total grave goods; EA: earthenware vessel; TC: trade ceramic vessel; MS: miscellaneous).

Type	E111	E112	E113	E114	E121	E129	E134	E800	Total
Number	36	18	9	5	2	1	3	73	147
%	24.5%	12.2%	6.1%	3.4%	1.4%	0.7%	2.0%	49.7%	100%

Table 4-14 Type distribution of earthenware vessels among common inhumations at Pulong Bakaw.

Type	T100	T101	T102	T103	T104	T105	T109	T110	T111	T112
Number	5	14	5	4	1	1	1	2	38	26
%	3.1%	8.8%	3.1%	2.5%	0.6%	0.6%	0.6%	1.3%	23.8%	16.3%
Type	T113	T114	T115	T119	T120	T123	T129	T130	T131	T132
Number	4	1	3	3	1	2	1	1	7	2
%	2.5%	0.6%	1.9%	1.9%	0.6%	1.3%	0.6%	0.6%	4.4%	1.3%
Type	T134	T140	T143	T144	T145	T162	T200	T201	T204	T205
Number	1	1	1	4	1	1	1	1	10	4
%	0.6%	0.6%	0.6%	2.5%	0.6%	0.6%	0.6%	0.6%	6.3%	2.5%
Type	T209	T225	T244	T301	T304	T900	T901	T904	T905	Total
Number	3	1	1	1	1	1	2	1	2	160
%	1.9%	0.6%	0.6%	0.6%	0.6%	0.6%	1.3%	0.6%	1.3%	100%

Table 4-15 Type distribution of trade ceramic vessels among common inhumations at Pulong Bakaw.

Material	Type and total (58 items)
Ceramics (M1xx)	28 clay spindle whorls (M111); 1 broken porcelain object (M120).
Metal (M2xx)	3 metal anklets (M202); 2 metal objects (M200); 1 iron spear (M215); 2 unknown iron objects (M210); 3 brass locks (M229); 1 unknown brass object (M220); 1 copper ring (M234); 1 gold bead (M243).
Glass (3xx)	4 bracelets (M301); 3 sets of beads (M303).
Bone and Shell (M4xx)	2 large shells (M430).
Stone (M5xx)	1 stone tool (M512); 1 unknown stone object (M519); 1 large stone (M510).
Unknown (M9xx)	2 sets of beads (M903); 1 unknown object (M900).

Table 4-16 Type distribution of miscellaneous grave goods among common inhumations at Pulong Bakaw.

Uncommon inhumations

Headless supine burials

There were four cases of headless burials at Pulong Bakaw.[15] They were all adults, with evidence of head-taking (damage on the neck vertebrae). Their orientations were all different: north, east, southwest, and northeast. Three out of four had 10 grave goods in total: three earthenwares, four trade ceramics and three miscellaneous goods.

Semi-flexed position burials

There were five semi-flexed position burials at Pulong Bakaw: two adults, two juveniles and two children.[16] In terms of orientation, three of them were toward the north, and two toward the east. With regard to their facing direction: three were right facing and two were left facing. Two of them were children, two were juveniles, only one was an adult. There were two burials containing a total of nine items: PB-031 was a juvenile with one spindle whorl; and PB-191 was an adult containing one earthenware pot, five trade ceramics, one iron object, and one broken porcelain item.

[15] They are: PB-035, PB-106, PB-121, and PB-185.
[16] They are PB-031, PB-110, PB-111, PB-191, PB-193.

Skull-only graves

Two skull-only remains (PB-075 and PB-079) were encountered at Pulong Bakaw. These two skulls were in an upward position, not in a normal supine position. One was an adult, with one Chinese black-and-white plate nearby, and the other had no age data and lacked grave goods, but was interred very close to two common inhumations.

Jar burials

Pulong Bakaw had four jar burials,[17] and all had Chinese stoneware jars as their containers. Two of them had Chinese wares as their covers, and had many other ceramic vessels as grave goods. Two had no jar cover nor any other grave goods.

Multiple graves

At Pulong Bakaw, there were seven cases of multiple graves with five cases of two individuals buried together in one grave pit (multiple skeletons, multiple graves).[18] These burials were in various combinations: two cases of one child and one infant together; one case of an adult and a child; one case of an adult and one infant; and one case of two adults together.

In addition, there were two cases of an 'extra' skull added to the grave (skeleton-skull, multiple graves).[19] They were both common inhumations (one adult and one older juvenile) with one extra skull near the head of the skeleton.

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[17] They are: PB-064, PB-089, PB-138, and PB-204.
[18] They are: PB-039 and PB-039A, PB-051 and PB-052, PB-142 and PB-143, PB-153 and PB-154, PB-170 and PB-171.
[19] They are: PB-016 and PB-016A, PB-047 and PB-047A.

Non-skeleton interments

Twenty-nine non-skeleton interments[20] were encountered at Pulong Bakaw, and contained 55 items: 37 earthenwares, 15 trade ceramics and only three miscellaneous goods.

Karitunan (KR)

Karitunan is approximately eight kilometres north of Kay Tomas and Pulong Bakaw. According to fieldwork notes, the site is also located on a small finger of land extending toward the sea. Unfortunately, there is no information on how the cemetery was arranged. There were two localities excavated here: Burial 1 to 101 were excavated from 16 December 1960 to 26 March 1961; and burial 200 to 245 were excavated between 18 February and 18 March 1961.

There were 107 common inhumations, seven semi-flexed position burials, two prone position burials, 11 headless burials, four cases of multiple graves, and four bundle burials. There were nine non-skeleton interments, but no jar burial was encountered. Their basic information is given below:

Common inhumations

The skeleton

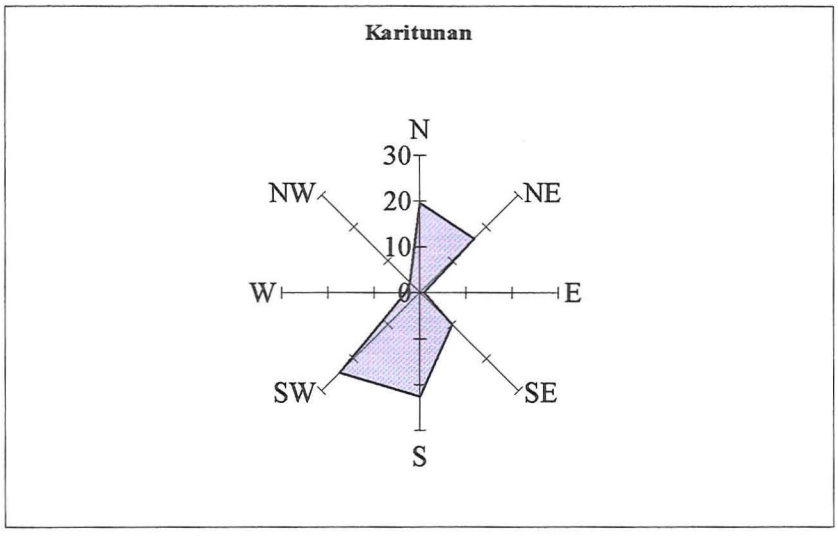
At Karitunan, there was no direction dominating the orientations (Table 4-17). The southwest had the most burials (25 cases, 24.8%) but was not significantly different from other directions like the south (23 cases, 22.8%), the north (20 cases, 19.6%), or even the northeast (17 cases, 15.8%). On the other hand, the contrast between north, north and northeast (37 cases, 36.3%), and south, south and southwest (48 cases, 47%),

[20] They are: PB-011, PB-019, PB-020, PB-023, PB-036, PB-054, PB-065, PB-077, PB-080, PB-081, PB-086, PB-087, PB-094, PB-097, PB-098, PB-101, PB-105, PB-109, PB-118, PB-131, PB-132, PB-141, PB-146, PB-149, PB-152, PB-178, PB-179, PB-205, PB-207.

was much clearer at Karitunan than any other sites in Calatagan. Among 107 common inhumations, there were 68 adults, 13 juveniles, 11 children, and two infants (Table 4-18). Tooth-filing information was not available for most of the adults (62 cases, 91.2%). There were only five cases where tooth-filing was identified, and one case without tooth-filing. There were two females and one male, all adults, identified at Karitunan.

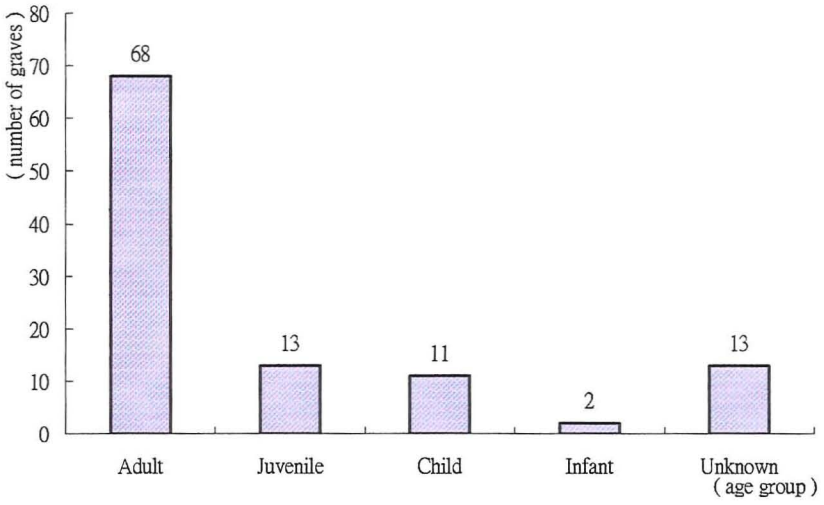
Grave goods

At Karitunan, 107 common inhumations had 196 grave goods, including 54 earthenwares, 98 trade ceramics, and 44 other grave goods. Approximately, 64 per cent of the burials contained at least one grave good, slightly less than at Kay Tomas and Pulong Bakaw. Among seven Calatagan sites, trade ceramic vessels were more common at Karitunan in either number (98 items) or distribution (49 cases) than earthenware vessels (54 items in 43 cases).



	N	NE	E	SE	S	SW	W	NW	Unknown	Sum
Count	20	16	1	10	23	25	3	3	6	107
Percentage	19.8%	15.8%	1.0%	9.9%	22.8%	24.8%	3.0%	3.0%		

Table 4-17 Distribution of orientations among common inhumations at Karitunan (percentage excludes unknown data).

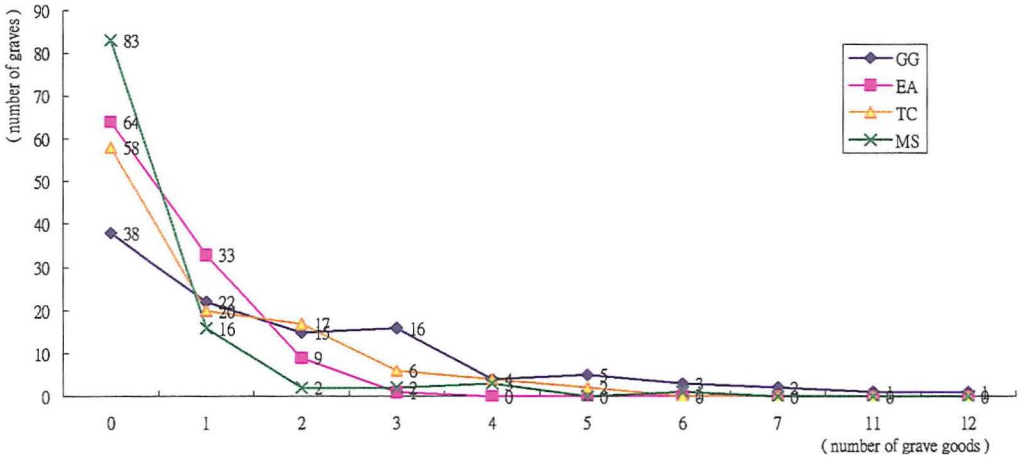


	Adult	Juvenile	Child	Infant	Unknown	Sum
Count	68	13	11	2	13	107
Percentage	72.3%	13.8%	11.7%	2.1%		

Table 4-18 Distribution of age groups among common inhumations at Karitunan (percentage excludes unknown data).

Formula*	Filing ?U6L	Filing ?U8L	Filing 4U?L	Filing 4U4L	Filing but no formula	No filing	No data
Total	1	1	1	1	1	1	62

Table 4-19 Types and total of teeth filing formula among adult common inhumations at Karitunan (*U for upper jaw, L for lower jaw, number for total teeth filed).



	0 item	1 item	2 items	3 items	4 items	5 items	6 items	7 items	11 items	12 items
GG (196 items)	38 (35.5%)	22 (20.6%)	15 (14.0%)	16 (14.8%)	4 (3.7%)	5 (4.7%)	3 (2.8%)	2 (1.9%)	1 (0.9%)	1 (0.9%)
EA (54 items)	64 (59.8%)	33 (30.8%)	9 (8.4%)	1 (0.9%)	0	0	0	0	0	0
TC (98 items)	58 (54.2%)	20 (18.7%)	17 (15.9%)	6 (5.6%)	4 (3.7%)	2 (1.9%)	0	0	0	0
MS (44 items)	83 (77.6%)	16 (15.0%)	2 (1.9%)	2 (1.9%)	3 (2.8%)	0	1 (0.9%)	0	0	0

Table 4-20 Distribution of common inhumations with/without grave goods at Karitunan.

Type	E800	E801	E803	E804	E808	Total
Number	21	23	2	5	3	54
%	38.9%	42.655.1%	3.7	9.3%	5.6%	100%

Table 4-21 Type distribution of earthenware vessels among common inhumations at Karitunan.

Type	T101	T102	T103	T104	T105	T109	T111	T112	T113
Number	10	2	2	3	3	2	6	6	1
%	10.2%	2.0%	2.0%	3.1%	3.1%	2.0%	6.1%	6.1%	1.0%
Type	T115	T121	T123	T131	T132	T133	T135	T144	T145
Number	1	1	1	8	6	2	1	5	2
%	1.0%	1.0%	1.0%	8.2%	6.1%	2.0%	1.0%	5.1%	2.0%
Type	T201	T202	T203	T204	T205	T231	T291	T300	T301
Number	15	1	1	1	3	5	5	1	2
%	15.3%	1.0%	1.0%	1.0%	3.1%	5.1%	5.1%	1.0%	2.0%
Type	T311	T340	Total						
Number	1	1	98						
%	1.0%	1.0%	100%						

Table 4-22 Type distribution of trade ceramic vessels among common inhumations at Karitunan.

Material	Type and total (44 items)
Ceramics (M1xx)	11 clay spindle whorls (M111).
Metal (M2xx)	1 metal spear (M205); 1 iron spear (M211); 1 iron bracelet (M215); 1 unknown iron tool (M218); 1 gold ring (M245).
Glass (3xx)	16 glass bracelets (M301); 1 set of 2 glass beads (M303).
Bone and Shell (M4xx)	4 animal bones (M410).
Stone (M5xx)	1 stone object (M519).
Unknown (M9xx)	1 set of 6 unknown material beads (M903).

Table 4-23 Type distribution of miscellaneous grave goods among common inhumations at Karitunan.

Uncommon burials

Headless supine burials

There were eight headless supine burials encountered at Karitunan.[21] Five out of the eight cases were orientated to the northeast; the southwest had three cases. All headless burials were adults, except two which were unrecognisable. Five headless burials had grave goods: two cases had five items, one case had four items, one case had two items, and one had one item.

[21] They are: KR-048, KR-073, KR-078; KR-209, KR-211, KR-226, KR-235, and KR-236.

Prone position burial

Karitunan is the only other site, apart from Kay Tomas, containing prone position burials: KR-071 was a north orientated adult without grave goods; and KR-215 was a north orientated, headless juvenile with four trade ceramics.

Semi-flexed position burials

There were six cases of semi-flexed position burials at Karitunan.[22] All of them were adults, except one unknown case. Half of them were orientated to the northeast (three cases), while the north, the east, and the southeast had one case each. In regard to facing direction, right facing (four cases) was more popular than left facing (two cases). Only one in seven semi-flexed burials had one earthenware vessel as a grave good.

Multiple graves

There were four cases of multiple graves.[23] Two cases were one common inhumations buried in one pit: KR-204A/B was one adult and one juvenile; and KR-217 was an adult buried with another opposite orientated skeleton KR-218. There was one case of a common-semi-flexed multiple grave: KR-062A was an adult in a supine position with a semi-flexed individual KR-062B. Together they had one earthenware vessel and one trade ceramic. In addition, KR-096A/B/C was one adult supine individual (KR-096A) interred with one headless skeleton (KR-096B) and one skull (KR-096C). The two skeletons were in opposite orientations: KR-096A was northeast orientated but KR-096B was toward the southwest.

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[22] They are: KR-017, KR-022, KR-029, KR-038, KR-099, and KR-219.
[23] They are: KR-062A/B, KR-096A/B/C, KR-204A/B, and KR-217 and KR-218.

Non-skeleton interment

There were nine non-skeleton interments[24] found at Karitunan with 26 items: seven earthenwares, 13 trade ceramics and six miscellaneous items.

Palapat (PP)

This site is about five kilometres south of Calatagan town, and derived its name from palapat trees which are abundant in this area. The land on which the site is located faces the coast and is near the shore. Excavation was concentrated on a knoll, on top of which one can have a good view of the sea and the surrounding area. The site is approximately seven metres in elevation, and gradually slopes downward due northeast and abruptly cuts south due to the action of the sea. At Palapat, there are two localities side by side: Melian's property on the northwest part and Uy's land to the southeast, which are both named after their respective landowners. Field excavation was carried out in April and May in 1961: 12 April to 27 May at the Melian locality; and 9 to 27 April at the Uy locality.

At Palapat, 115 burials were recognized as common inhumations, which had 168 grave goods. Moreover, there were 13 cases of uncommon inhumations: two semi-flexed position burials, five headless burials, four multiple graves, and two bundle burials. There were also three jar burials.

Common inhumations

The skeleton

Among 115 common inhumations, there were 112 cases available for orientation: the most common orientation at Palapat was towards the east (38 cases, 33.9%),

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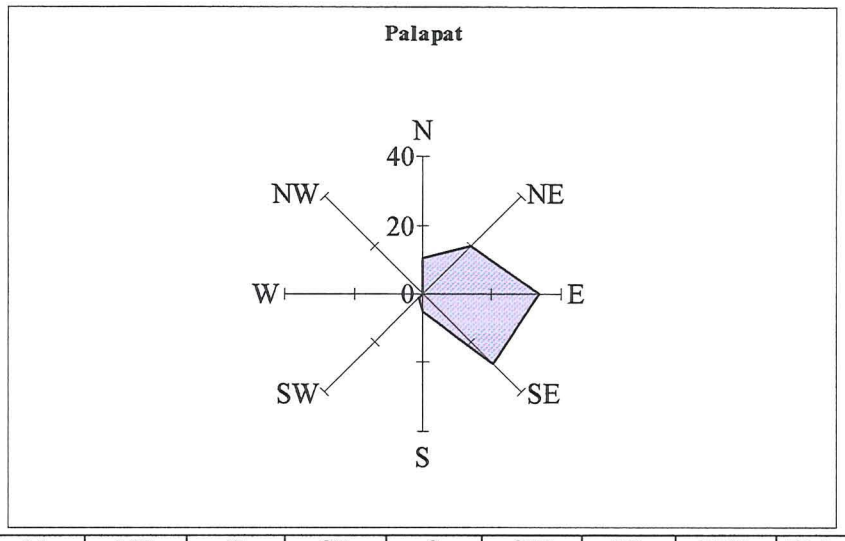
[24] They are: KR-021, KR-023, KR-054, KR-200, KR-207, KR-221, KR-232, KR-233, KR-245.

followed by the southeast (32 cases, 29.6%), the northeast (22 cases, 19.6%), the north (12 cases, 10.7%), the south (6 cases, 5.4%), and finally the southwest (2 cases, 1.8%). In regard to age, there were 81 adults (73.6%), 7 juveniles (6.4%), 20 children (18.2%), and two infants. For 48 recognizable adult cases, two-thirds (32 cases) had tooth-filing, and their variation in filing formula is greater than at any other Calatagan sites. Nine adult cases were identified in sex: six females and three males.

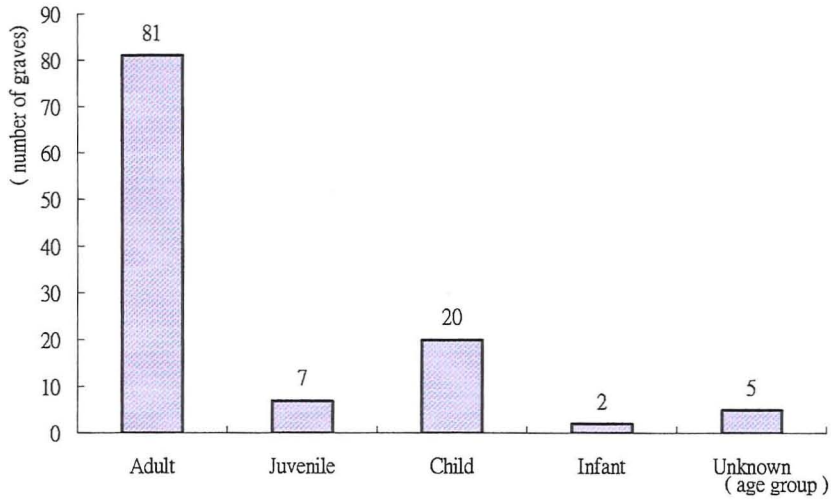
Grave goods

Of the 168 grave goods with common inhumations, there were 69 earthenware vessels, 70 trade ceramic vessels, and 29 other grave goods (Table 4-27). There was over 60 per cent of common inhumations (71 cases) with at least one grave good. Earthenware vessels were the most common artefact used as grave goods, 44 per cent of burials (51 cases) had at least one item; trade ceramic vessels occurred in approximately 36 per cent of the burials (42 cases); and miscellaneous artefacts only occurred in 20 per cent of the common inhumations (23 cases).



	N	NE	E	SE	S	SW	W	NW	Unknown	Sum
Count	12	22	38	32	6	2	0	0	3	115
Percentage	10.7%	19.6%	33.9%	28.6%	5.4%	1.8%	0	0		

Table 4-24 Distribution of orientations among common inhumations at Palapat (percentage excludes unknown data).

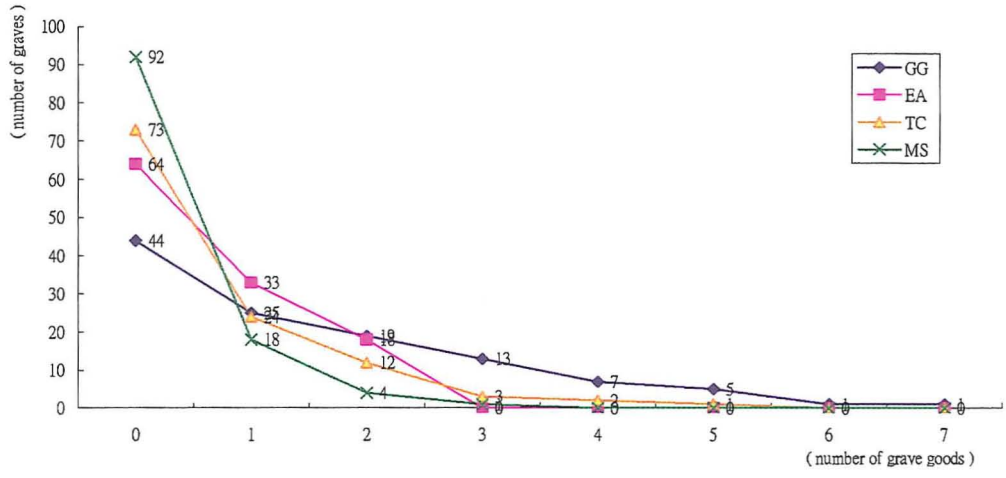


	Adult	Juvenile	Child	Infant	Unknown	Sum
Count	81	7	20	2	5	115
Percentage	73.6%	6.4%	18.2%	1.8%		

Table 4-25 Distribution of age groups among common inhumations at Palapat (percentage excludes unknown data).

Formula*	Filing 4U?L	Filing 5U5L	Filing 6U?L	Filing 6U4L	Filing 6U6L	Filing 7U6L	Filing 7U9L	Filing 8U6L	Filing 8U8L	Filing but no data	No filing	No data
Total	1	1	2	4	2	1	1	1	1	18	16	33

Table 4-26 Types and total of teeth filing formula among adult common inhumations at Palapat (*U for upper jaw, L for lower jaw, number for total teeth filed).



	0 item	1 item	2 items	3 items	4 items	5 items	6 items	7 items
GG (168items)	44 (38.3%)	25 (21.7%)	19 (16.5%)	13 (11.3%)	7 (6.1%)	5 (4.3%)	1 (0.9%)	1 (0.9%)
EA (69 items)	64 (55.7%)	33 (28.7%)	18 (15.7%)	0	0	0	0	0
TC (70 items)	73 (63.5%)	24 (20.9%)	12 (10.4%)	3 (2.6%)	2 (1.7%)	1 (0.9%)	0	0
MS (29 items)	92 (80%)	18 (15.7%)	4 (3.5%)	1 (0.9%)	0	0	0	0

Table 4-27 Distribution of common inhumations with/without grave goods at Palapat.

Type	E800	E801	E803	E804	E808	E809	Total
Number	12	38	14	3	1	1	69
%	17.4%	55.1%	20.3%	4.3%	1.4%	1.4%	100%

Table 4-28 Type distribution of earthenware vessels among common inhumations at Palapat.

Type	T101	T103	T104	T105	T111	T112	T113	T115	T120
Number	2	1	1	2	10	13	2	1	1
%	2.9%	1.4%	1.4%	2.9%	14.3%	18.6%	2.9%	1.4%	1.4%
Type	T123	T131	T132	T133	T135	T139	T142	T143	T144
Number	1	15	2	2	1	1	1	1	4
%	1.4%	21.4%	2.9%	2.9%	1.4%	1.4%	1.4%	1.4%	5.7%
Type	T149	T164	T201	T205	T244	T245	T301	Total	
Number	1	1	1	3	1	1	1	70	
%	1.4%	1.4%	1.4%	4.3%	1.4%	1.4%	1.4%	100%	

Table 4-29 Type distribution of trade ceramic vessels among common inhumations at Palapat.

Material	Type and total (29 items)
Ceramics (M1xx)	10 clay spindle whorls (M111); 1 clay net sink (M112); 1 unknown clay object (M110).
Metal (M2xx)	1 iron tool (M218); 1 brass bell (M229); 2 Chinese coins (M291).
Glass (3xx)	5 bracelets (M301).
Bone and Shell (M4xx)	1 animal bone (M410); 5 large shells (M430); 1 shell bracelet (M431).
Stone (M5xx)	1 set of 8 carnelian beads (M523).

Table 4-30 Type distribution of miscellaneous grave goods among common inhumations at Palapat.

Uncommon burials

Headless supine graves

At Palapat, four headless burials were encountered.[25] They were all adults, except one unknown case, and in various orientations: one northeast, two east, and one southeast. Two of them had grave goods: one had one blue-and-white bowl, another had two earthenwares (one kendi-type and one ordinary type).

Semi-flexed position burials

There were three semi-flexed position burials at Palapat (PP-M071, PP-M109 and PP-M110). They were all adults and facing right, but in different orientations: northwest, southwest, and east. PP-M071 was the only one interred with grave goods:

[25] They are: PP-M061, PP-M086, PP-M100, and PP-M106.

one large shell and one over-glazed disc on the pelvis, and a group of blue-and-white sherds at the right side of the skeleton.

Jar burials

Three infant jar burials were encountered at Palapat.[26] One burial had an earthenware burial jar, one had stoneware, and one is unknown. None had covers or any other grave goods.

Multiple graves

There were four multiple graves at Palapat. PP-M020A/B and PP-M094/M099 were two supine inhumations together. PP-M020A was a northeast-orientated female adult, buried with a northeast-orientated male adult. They had no grave goods. PP-M094 was a southeast-orientated adult interred with an infant PP-M095. In addition, PP-M111A was a common inhumation with one extra skull beside its head. PP-M040 was a headless skeleton with one large porcelain plate covering the lower part of the legs; four adult skulls, one stone statue and two beads were placed beside the left foot.

Non-skeleton interment

There was only one non-skeleton interment encountered at Palapat, PP-U018. It was a pit containing one ordinary earthenware pot and one blue-and-white plate.

[26] They are: PP-M012, PP-M064, and PP-U017.

Punta Sunog (PS)

There are written burial records and specimen inventories for this site, but no drawings.

There were 122 common inhumations at Punta Sunog, which had 216 grave goods. There were 12 uncommon inhumations: one semi-flexed burial, three headless burials, two skull-only graves, and six cases of multiple graves. There were also nine jar burials.

Common inhumations

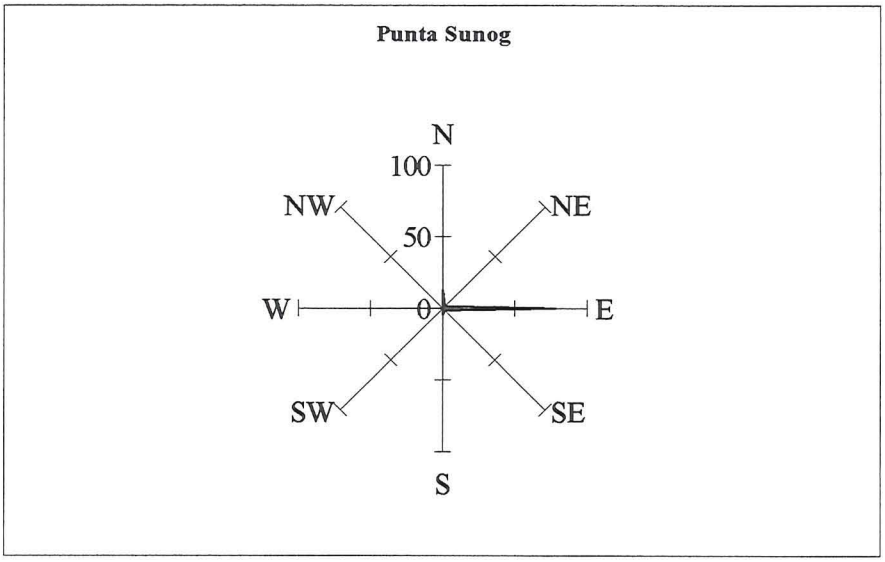
Skeletons

More than three quarters of the common inhumations (92 burials, 78%) were towards the east at Punta Sunog, which is significantly different from the other sites in Calatagan. There were only 16 cases (13.6%) towards the north, five (4.2%) towards the south, four (3.4%) towards the southeast, and one burial towards the west. In regard to age, nearly three-quarters were adults (87 cases, 73.1%). There were 19 child burials (16%) and 13 juveniles (10.9%). Among the 87 adults, more than half of the common inhumations (45 cases, 51.7%) were unrecognisable in regards to tooth-filing. There were 23 cases (26.4%) of tooth-filing and 19 cases (21.8%) of no tooth-filing. Unfortunately, sex was not identified for any of the skeletons at Punta Sunog.

Grave goods

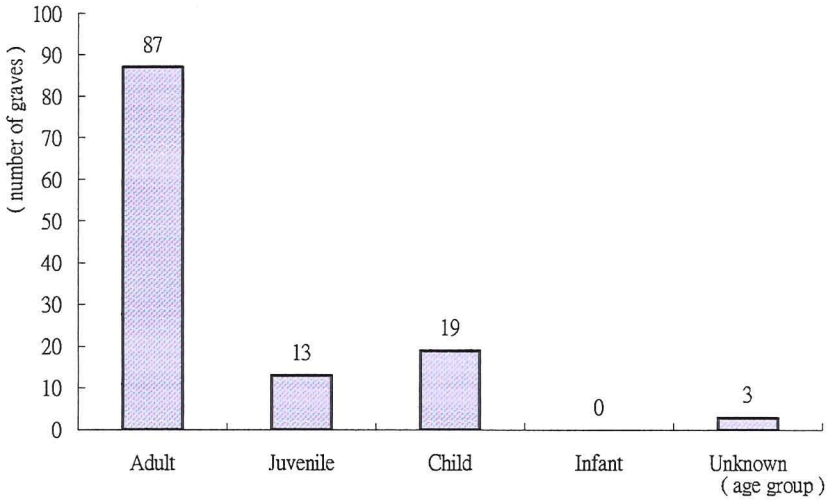
Of the 216 grave goods, 99 are earthenware vessels, 93 trade ceramic vessels, and 24 other grave goods. Sixty-eight per cent of common inhumations (83 cases) had at least one grave good. Slightly more than half of the burials (64 cases, 52.5%) had at least one earthenware vessel, nearly 35 per cent of burials (42 cases) had trade ceramic

vessels, and less than 15 per cent of burials (18 cases) had other miscellaneous grave goods.



	N	NE	E	SE	S	SW	W	NW	Unknown	Sum
Count	16	0	92	4	5	0	1	0	4	122
Percentage	13.6%	0	78.0%	3.4%	4.2%	0	0.8%	0		

Table 4-31 Distribution of orientations among common inhumations at Punta Sunog (percentage excludes unknown data).

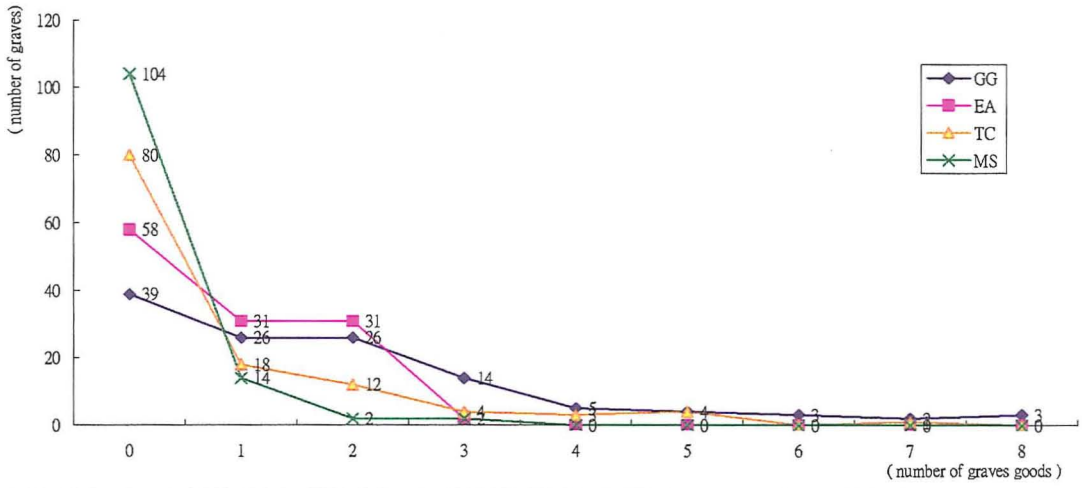


	Adult	Juvenile	Child	Infant	Unknown	Sum
Count	87	13	19	0	3	122
Percentage	73.1%	10.9%	16.0%	0		

Table 4-32 Distribution of age groups among common inhumations at Punta Sunog (percentage excludes unknown data).

Formula*	Filing ?U6L	Filing 6U?L	Filing 6U6L	Filing 6U8L	Filing but no formula	No filing	No data
Total	1	1	1	1	19	19	45

Table 4-33 Types and total of teeth filing formula among adult common inhumations at Punta Sunog (*U for upper jaw, L for lower jaw, number for total teeth filed).



	0 item	1 item	2 items	3 items	4 items	5 items	6 items	7 items	8items
GG (216 items)	39 (32.0%)	26 (21.3%)	26 (21.3%)	14 (11.5%)	5 (4.1%)	4 (3.3%)	3 (2.5%)	2 (1.6%)	3 (2.5%)
EA (99 items)	58 (47.5%)	31 (25.4%)	31 (25.4%)	2 (1.6%)	0	0	0	0	0
TC (93 items)	80 (65.6%)	18 (14.8%)	12 (9.8%)	4 (3.3%)	3 (2.5%)	4 (3.3%)	0	1 (0.8%)	0
MS (24 items)	104 (85.2%)	14 (11.5%)	2 (1.6%)	2 (1.6%)	0	0	0	0	0

Table 4-34 Distribution of common inhumations with/without grave goods at Punta Sunog.

Type	E800	E801	E803	E804	Total
Number	18	47	27	7	99
%	18.2%	47.5%	27.3%	7.1%	100%

Table 4-35 Type distribution of earthenware vessels among common inhumations at Punta Sunog.

Type	T101	T102	T103	T105	T109	T111	T112	T113	T115
Number	1	2	3	1	1	22	22	11	6
%	1.1%	2.2%	3.2%	1.1%	1.1%	23.7%	23.7%	11.8%	6.5%
Type	T121	T123	T131	T132	T133	T141	T161	T169	T201
Number	1	1	6	1	3	2	1	1	2
%	1.1%	1.1%	6.5%	1.1%	3.2%	2.2%	1.1%	1.1%	2.2%
Type	T204	T205	T244	Total					
Number	1	4	1	93					
%	1.1%	4.3%	1.1%	100%					

Table 4-36 Type distribution of trade ceramic vessels among common inhumations at Punta Sunog.

Material	Type and total (24 items)
Ceramics (M1xx)	12 clay spindle whorls (M111); 2 clay net sinks (M112); 1 unknown porcelain object (M120).
Metal (M2xx)	1 iron spear (M215); 2 brass bracelets (M221).
Bone and Shell (M4xx)	1 animal bone (M410); 1 shell (M430).
Stone (M5xx)	2 stone tools (M512); 1 gripped marked stone (M519).
Unknown (M9xx)	1 set of unknown material beads (M903).

Table 4-37 Type distribution of miscellaneous grave goods among common inhumations at Punta Sunog.

Uncommon inhumations

Headless supine burials

Punta Sunog had three headless burials.[27] They were all adults and placed in a supine position, but in different orientations: northeast, east, and south. Only the south orientated burial had a grave good, a *kendi*-type earthenware.

Semi-flexed position burial

There was only one semi-flexed position burial (PS-015). It was an adult individual in north orientation. It had one common earthenware pot as a grave good.

Skull-only graves

Two individual skulls (PS-054 and PS-063) were found at Punta Sunog. PS-054 had one earthenware vessel; there is no information in age, sex, or tooth-filing. PS-063 was an adult skull without grave goods.

Jar burials:

The five jar burials[28] were all infants and interred in stoneware jars, three of which were Thai wares. Four of these jar burials had other grave goods: two had two trade ceramics and two had one, including three items that were used as burial jar covers.

Multiple graves

There were six multiple graves in very different combinations at Punta Sunog. PS-075 was also an old adult buried with a child PS-076, both in supine position. PS-075 had one Thai jar and one common earthenware vessel. PS-093A was an old adult with one clay spindle whorl, and PS-093B was a bundle of bones at the left side of PS-093A. It is quite reasonable to assume that the PS-093B bundle of bones was the result

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[27] They are: PS-008, PS-090, and PS-129.
[28] They are: PS-055, PS-094, PS-103, PS-108, and PS-125.

of the later burial of PS-093A, though there is no direct evidence. PS-100A/B/C was also special, with three skeletons piled in one pit, in which PS-100A was on the top of the other two. They were all adults in supine position, but PS-100B was headless. There was one common earthenware vessel and one iron spear in this burial pit.

In addition to multiple inhumation graves, there were other multiple graves. PS-022 was an old adult interred with an infant jar burial PS-023. PS-022 had one blue-and-white bowl and one common earthenware vessel, while PS-023 had a monochrome saucer used as a cover for a large burial jar. The last case was an infant jar, PS-104A, burial interred with a bundle of bones PS-104B. There were no other grave goods together, except a Thai stoneware jar used as a burial jar. PS-097A and PS-097B were special: both were infant jar burials in stoneware jars. PS-097A had a blue-and-white plate as a jar cover, and another celadon plate inside the burial jar.

Santa Ana (SA)

This site is about five kilometres north of the town of Calatagan, and the nearest site, Palapat, is only 500 metres to the northwest.

At Santa Ana, there were 56 common inhumations with 121 grave goods. In addition, there were four headless burials, one skull-only grave, three cases of multiple graves, and one jar burial.

Common inhumations

The skeleton

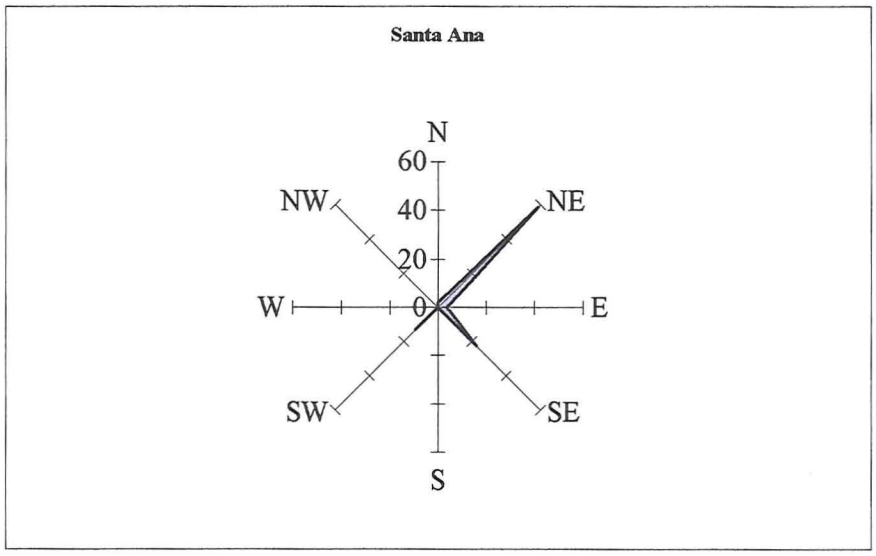
Of the 53 burials with orientation information (see Table 4-38), the most common orientation was toward the northeast, with 31 cases, 58.5 per cent, at Santa Ana. The second most common direction was to the southeast (12 burials, 22.6%),

followed by the southwest (7 cases, 13.2%), with only two burials toward the east and one burial toward the north. In regard to 55 burials with age data (see Table 4-39), there were 42 adults (76.4%), five juveniles (9.1%), seven children (12.7%), and one infant (1.8%). Among 42 adults (see Table 4-40), except for 11 unrecognisable cases, there were nine cases (29%) of no tooth-filing and 22 with tooth-filing (71%). There were only six female individuals identified at Santa Ana, and they were all adults.

Grave goods

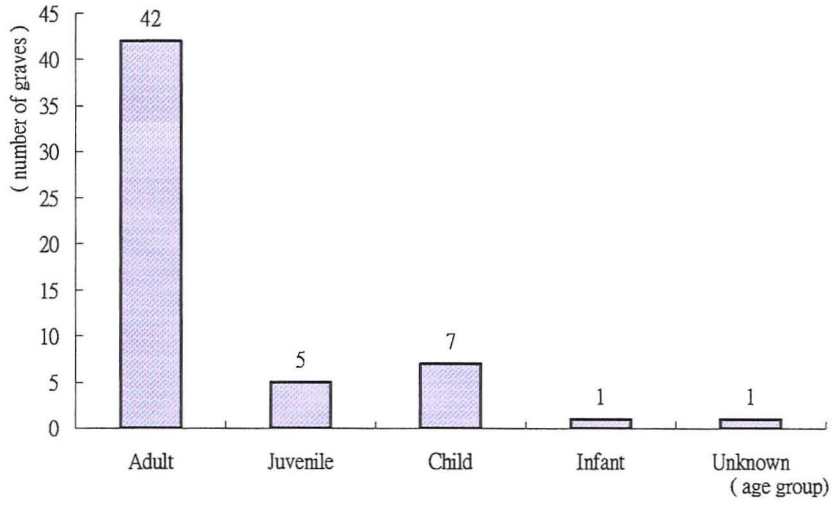
The 121 grave goods included 45 earthenware vessels, 50 trade ceramic vessels, and 26 other grave goods. Table 4-41 shows that 73 per cent of common inhumations (41 cases) contained grave goods. Though the total number of trade ceramics is more than that of earthenwares, common inhumations containing earthenwares (28 cases, 50%) were slightly more popular than the burials with trade ceramics (25 cases, 44.6%). Only 16, 28.6 per cent, common inhumations had miscellaneous grave goods.

In regard to the types of earthenwares, more than half (24 items, 53.3%) were of ordinary form (E111, E112, and E801). The second popular form was the *kendi*-type vessel (E114 and E804, 9 items, 20%), and the third was the grooved surface vessel (E113, 7 items, 15.6%).



	N	NE	E	SE	S	SW	W	NW	Unknown	Sum
Count	1	31	2	12	0	7	0	0	3	56
Percentage	1.9%	58.5%	3.8%	22.6%	0	13.2%	0	0		

Table 4-38 Distribution of orientations among common inhumations at Santa Ana (percentage excludes unknown data).

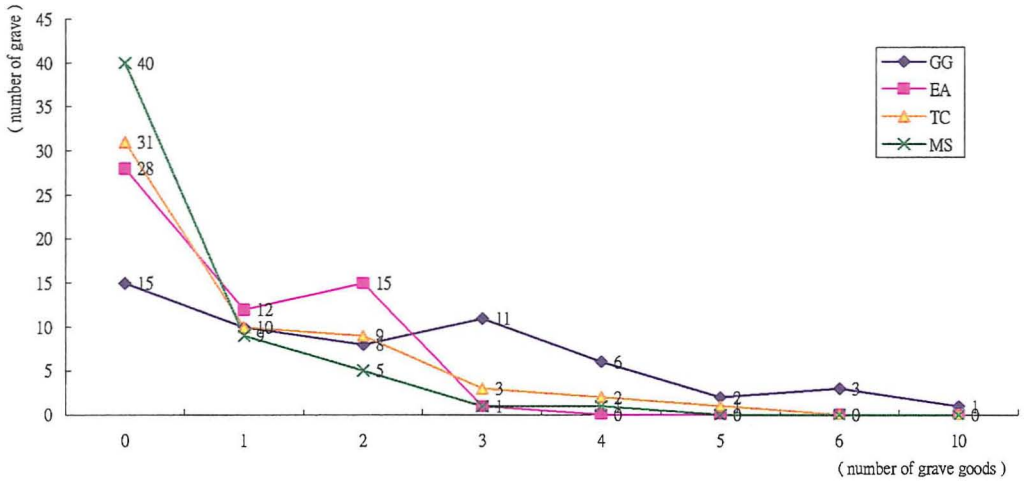


	Adult	Juvenile	Child	Infant	Unknown	Sum
Count	42	5	7	1	1	56
Percentage	76.4%	9.1%	12.7%	1.8%		

Table 4-39 Distribution of age groups among common inhumations at Santa Ana (percentage excludes unknown data).

Formula*	Filing 2U0L	Filing 4U?L	Filing 4U6L	Filing 5U6L	Filing 6U?L	Filing 6U0L	Filing 6U5L	Filing 6U6L	Filing but no formula	No filing	No data
Total	1	1	1	1	2	1	1	1	13	9	11

Table 4-40 Types and total of teeth filing formula among adult common inhumations at Santa Ana (*U for upper jaw, L for lower jaw, number for total teeth filed).



	0 items	1 items	2 items	3 items	4 items	5 items	6 items	10items
GG (121 items)	15 (26.8%)	10 (17.9%)	8 (14.3%)	11 (19.6%)	6 (10.7%)	2 (3.8%)	3 (5.4%)	1 (1.8%)
EA (45 items)	28 (50%)	12 (21.4%)	15 (26.8%)	1 (1.8%)	0	0	0	0
TC (50 items)	31 (55.4%)	10 (17.9%)	9 (16.1%)	3 (5.4%)	2 (3.8%)	1 (1.8%)	0	0
MS (26 items)	40 (71.4%)	9 (16.1%)	5 (8.9%)	1 (1.8%)	1 (1.8%)	0	0	0

Table 4-41 Distribution of common inhumations with/without grave goods at Santa Ana.

Type	E111	E112	E113	E114	E800	E801	E804	Total
Number	14	7	7	7	5	3	2	45
%	31.1%	15.6%	15.6%	15.6%	11.1%	6.7%	4.4%	100%

Table 4-42 Type distribution of earthenware vessels among common inhumations at Santa Ana.

Type	T101	T102	T103	T104	T105	T111	T112	T113	T122
Number	2	1	1	2	1	3	17	2	3
%	4%	2%	2%	4%	2%	6%	34%	4%	6%
Type	T131	T132	T133	T192	T205	T235	T909	Total	
Number	5	3	5	1	2	1	1	50	
%	10%	6%	10%	2%	4%	2%	2%	100%	

Table 4-43 Type distribution of trade ceramic vessels among common inhumations at Santa Ana.

Material	Type and total (26 items)
Ceramics (M1xx)	8 clay spindle whorls (M111); 1 unknown clay object (M110).
Metal (M2xx)	1 iron spear (M215); 1 unknown iron tool (M218).
Glass (3xx)	9 bracelets (M301); 2 sets of glass beads (M303).
Bone and Shell (M4xx)	1 shell (M430).
Stone (M5xx)	1 stone figure (M511); 1 stone tool (M512); 1 unknown stone object (M519).

Table 4-44 Type distribution of miscellaneous grave goods among common inhumations at Santa Ana.

Uncommon inhumations

Headless supine burials

Santa Ana had three headless burials.[29] They were all adults, without sex identified, and placed in a supine position. Two of them were orientated to the northeast, and the other one was to the southwest. The two northeast headless cases did not have any grave goods. On the other hand, the southwest case was buried with six grave goods: one common earthenware pot, four trade ceramics, and one iron slug.

Skull-only grave

There was one skull-only case (SA-30): it was an adult skull with its front teeth missing, and interred with an earthenware vessel.

Multiple graves

There were three multiple graves at Santa Ana. SA-71A and SA-71B were two adults together, with opposite orientation: SA-71A towards the southwest and SA-71B to the northeast. There were no grave goods in this pit. SA-71B was in quite an uncommon position: the left leg crossed over the right leg, and the lower arm bent over the chest. SA-71A was an incomplete skeleton with the skull and right torso missing; there was signs of a cut on the left leg. SA-72A and SA-72B were two young juveniles buried together. They were both toward the northeast in orientation, face to face. There was a monochrome bowl and a broken earthenware vessel placed between their bodies, as well as a large heap of shells by the right side of SA-72A.

SA-44 was a headless adult interred with a child jar burial, SA-45. SA-44 was a northeast orientated adult contained in a common earthenware pot. SA-45 was a three to five years old child, in supine position, inside a half broken large Chinese stoneware jar.

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[29] They are: SA-20, SA-28 and SA-50.

The mouths of the burial jars were toward the southwest, but the child's head was orientated toward the northeast. There were four trade ceramics and one earthenware pot as grave goods.

Non-skeleton

There were two non-skeleton cases at Santa Ana. SA-11 had only one earthenware vessel. SA-13 had two earthenware vessels and one monochrome bowl used as cover of one of the earthenware vessels.

Talisay (T)

This site comprises the third largest cemetery data in the Calatagan Peninsula. There are 184 available burial records, with information on 396 items of grave goods.

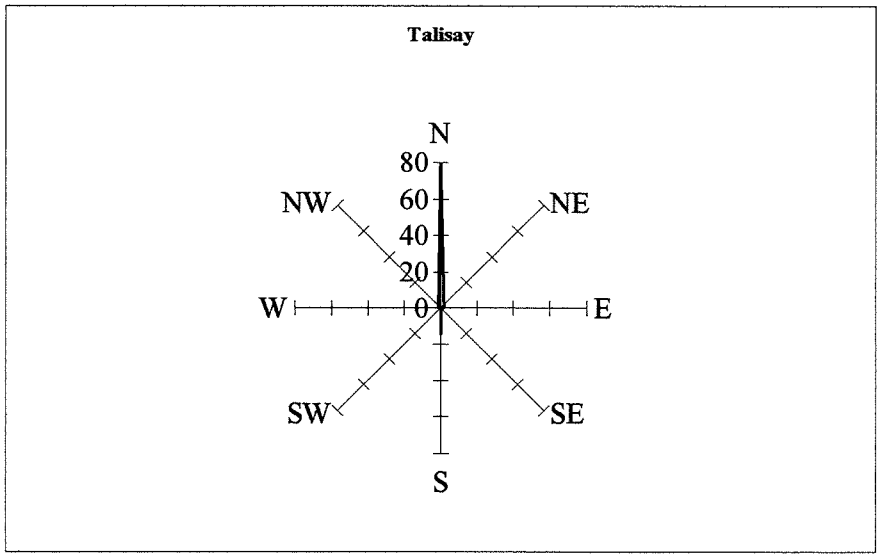
Common inhumations

The skeleton

Among the 133 common inhumations at Talisay, the most common orientation was north (95 burials, 80%). The second most common orientation was to the south, with 15 per cent of burials (18 cases). In regard to age, Talisay had the smallest percentage of adult common inhumations (70 cases, 58.8%), with most being of juveniles (24 cases, 20.2%). The percentage of child burials (19 cases, 16%) was average, but Talisay had the most cases of infant common inhumations (6 cases, 5%) in Calatagan. Among 23 recognisable cases (32.9% in 70 adults), 21 adult common inhumations had tooth-filing. In terms of sex, there were only five females (four adults and one juvenile) and three males (two adults and one juvenile) identified.

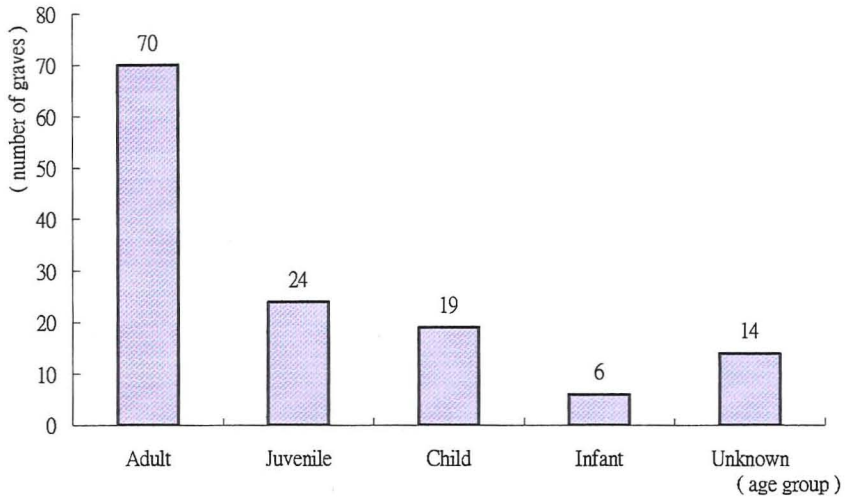
Grave goods

The common inhumations at Talisay had 304 grave goods, including 111 earthenware vessels, 141 trade ceramic vessels, and 52 miscellaneous grave goods. More than 70 per cent of common inhumations (95 cases) contained at least one grave good. Though the total number of trade ceramics is more than the earthenwares, common inhumations with earthenwares (71 cases, 53.4%) were slightly more popular than the burials with trade ceramics (66 cases, 49.6%). Less than a quarter (30 cases, 22.6%) of common inhumations had miscellaneous grave goods.



	N	NE	E	SE	S	SW	W	NW	Unknown	Sum
Count	95	2	2	0	18	0	1	2	13	133
Percentage	79.2%	1.7%	1.7%	0	15.0%	0	0.8%	1.7%		

Table 4-45 Distribution of orientations among common inhumations at Talisay (percentage excludes unknown data).

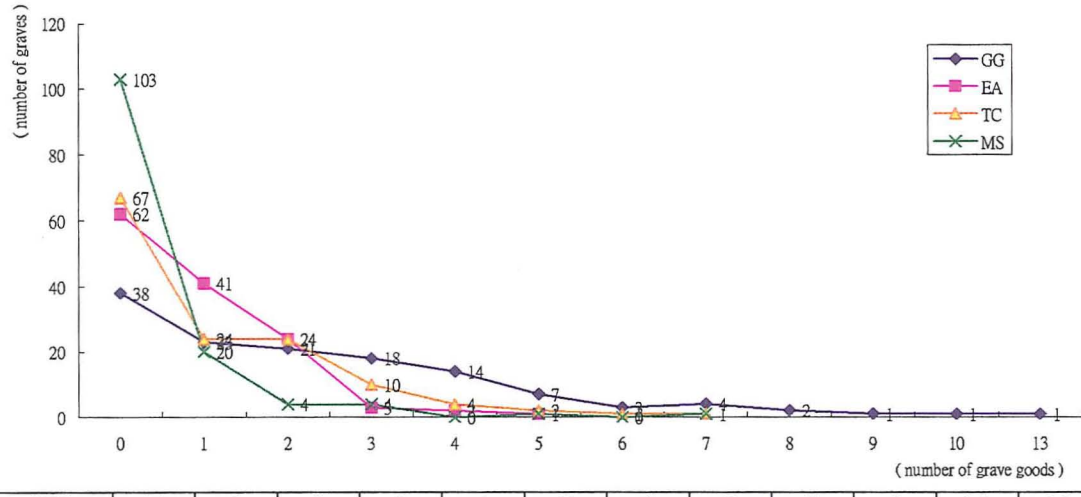


	Adult	Juvenile	Child	Infant	Unknown	Sum
Count	70	24	19	6	14	133
Percentage	58.8%	20.2%	16.0%	5.0%		

Table 4-46 Distribution of age groups among common inhumations at Talisay (percentage excludes unknown data).

Formula*	Filing ?U5L	Filing ?U6L	Filing 4U2L	Filing 4U4L	Filing 4U6L	Filing 6U5L	Filing 6U6L	Filing but no formula	No filing	No data
Total	1	1	1	1	1	1	3	12	2	47

Table 4-47 Types and total of teeth filing formula among adult common inhumations at Talisay (*U for upper jaw, L for lower jaw, number for total teeth filed).



Count (133)	0*	1	2	3	4	5	6	7	8	9	10	13
GG (304 items)	38 (28.6)	23 (17.3)	21 (15.8)	18 (13.5)	14 (10.5)	7 (5.3)	3 (2.3)	4 (3.0)	2 (1.5)	1 (0.8)	1 (0.8)	1 (0.8)
EA (111 items)	62 (46.6)	41 (30.8)	24 (18.0)	3 (2.3)	2 (1.5)	1 (0.8)						
TC (141 items)	67 (50.4)	24 (18.0)	24 (18.0)	10 (7.5)	4 (3.0)	2 (1.5)	1 (0.8)	1 (0.8)				
MS (52 items)	103 (77.4)	20 (15.0)	4 (3.0)	4 (3.0)	0	1 (0.8)	0	1 (0.8)				

Table 4-48 Distribution of common inhumations with/without grave goods at Talisay (all count on quantity of common inhumations; *numbers in rows stand for quantity of grave goods; number inside ( ) stands for percentage against total 133 common inhumations; GG: total grave goods; EA: earthenware vessel; TC: trade ceramic vessel; MS: miscellaneous).

Type	E800	E801	E803	E804	E808	Total
Number	33	59	10	6	3	111
%	29.7%	53.1%	9.0%	5.4%	2.7%	100%

Table 4-49 Type distribution of earthenware vessels among common inhumations at Talisay.

Type	T101	T103	T104	T105	T111	T112	T113	T123	T131
Number	6	6	2	5	14	16	3	1	29
%	4.3%	4.3%	1.4%	3.5%	9.9%	11.3%	2.2%	0.7%	20.6%
Type	T132	T133	T135	T141	T144	T145	T162	T163	T165
Number	6	2	3	1	5	2	3	2	1
%	4.3%	1.4%	2.2%	0.7%	3.5%	1.4%	2.2%	1.4%	0.7%
Type	T201	T204	T205	T301	T321	Total			
Number	13	1	18	1	1	141			
%	9.2%	0.7%	12.8%	0.7%	0.7%	100%			

Table 4-50 Type distribution of trade ceramic vessels among common inhumations at Talisay.

Material	Type and total (52 items)
Ceramics (M1xx)	12 clay spindle whorls (M111).
Metal (M2xx)	2 metal bracelets (M201); 1 metal earring (M209); 3 iron spears (M215); 1 unknown iron tool (M218); 1 gold leaf (M249).
Glass (3xx)	19 bracelets (M301); 1 set of 12 glass beads (M303).
Bone and Shell (M4xx)	2 shells (M430).
Stone (M5xx)	3 stone figures (M511); 1 stone tool (M512).
Unknown (M9xx)	6 sets of unknown material beads (M903).

Table 4-51 Type distribution of miscellaneous grave goods among common inhumations at Talisay.

Uncommon inhumations

Headless supine graves

There were 12 headless burials at Talisay.[30] Most of them were adults (7 out of 12); there were two elder juveniles and three unrecognizable cases. Moreover, the most common orientation among them was toward the north (10 out of 12), like most common inhumations, but one case was toward the east and one unknown. Most of them (10 out of 12) had at least one grave good: three burials had earthenwares and ten burials had trade ceramics.

[30] They are: T-013, T-014, T-021, T-050, T-069, T-074, T-075, T-094, T-099, T-123, T-125, and T-160.

Skull-only graves

Two individual skulls were found at Talisay, one adult and one juvenile.[31] None of them had grave goods.

Multiple graves

There were six cases of multiple graves at Talisay. T-133/135 was a two-common inhumations grave, one adult and one child toward the same north direction. There were cases of common-skull multiple graves: T-089A/B, T-154A/B and T-163A/B/C/D. T-089A was an adult common inhumation with one skull T-089B at the feet, and one earthenware vessel near the right foot. T-154A was north-orientated with one skull T-154B near the feet, as well as two earthenwares and two trade ceramics together. T-163A was a north orientated male adult with three extra adult skulls beside its left leg. In addition, there was a multiple grave containing one common inhumation T-158B, one headless supine inhumation T-158A on its right side, and one skull T-158C near the head. Finally, there was a case of two juvenile skulls (T-042A/B) buried together, without any other grave goods.

Non-skeleton interment

There were 20 non-skeleton interments at Talisay with 38 items: 19 earthenware vessels, 17 trade ceramics and two miscellaneous goods.

[31] They are: T-042A, T-042B, T-063, T112 and T-138A.

SUMMARY

In the preceding sections, the archaeological materials were presented and show similarities and differences in mortuary practices among the seven sites. In general, the burial evidence shows they all had commonalities in practice, and can be seen as having the same mortuary tradition. In terms of interment varieties, there are 22 types at the seven Calatagan sites. Common inhumation is the most usual practice (912 cases) and is encountered at every site. Non-skeleton interments (71 cases) are the second most common practice, followed by headless supine burial (59 cases), which is also found at the seven sites, as are multiple graves, different combinations together, of which there are 35 cases. Semi-flexed burials (22 cases) occur at four sites, as do jar burials (21 cases). Skull-only graves (10 cases) are found at five sites. The rarest burials are: two flexed burials at two sites, two prone burials at two sites, and one headless prone burial. In this section, I provide a general summary of mortuary practices at the seven sites. The comparative study and analysis is presented in the following two chapters.

Common inhumations

There was a total of 912 common inhumations from the seven sites. More than 90 per cent of the recognizable common inhumations were orientated toward five directions; the most common direction was the north (200 cases, 23.7%), followed by the east (170 cases, 20.1%), then the south (150 cases, 17.8%), the northeast (140 cases, 16.6%), and the southeast (124 cases, 14.7%). The other three orientations had only 7 per cent of recognizable burials: southwest had 35 burials (4.1%), northwest had 21 burials (2.5%), and the west had the fewest cases of only 5 burials (0.6%).

Type \ Site	KT	PB	KR	PP	PS	SA	T	(sum)
Common inhumation	233	146	107	115	122	56	133	912
Headless supine burial	16	4	8	4	3	3	12	50
Flexed burial	0	0	0	1	1	0	0	2
Prone burial	1	0	1	0	0	0	0	2
Headless prone burial	0	0	1	0	0	0	0	1
Semi-flexed burial	9	5	6	2	0	0	0	22
Skull-only grave	3	2	0	0	2	1	2	10
Jar burial	9	4	0	3	5	0	0	21
Multiple common grave	2	3	2	2	1	0	1	11
Common-headless grave	1	0	0	0	0	0	0	1
Common-semi-flexed grave	0	2	1	0	0	0	0	3
Headless-flexed	0	0	0	0	0	1	0	1
Multiple semi-flexed grave	0	0	0	0	0	1	0	1
Common-skull grave	2	2	0	1	0	0	3	8
Headless-skull grave	1	0	0	1	0	0	0	2
Common-headless-skull grave	0	0	1	0	0	0	1	2
Multiple skull-only grave	0	0	0	0	0	0	1	1
Common-jar grave	1	0	0	0	1	0	0	2
Headless-jar grave	0	0	0	0	0	1	0	1
Jar burial-bundle grave	0	0	0	0	1	0	0	1
Multiple jar burials	0	0	0	0	1	0	0	1
Non-skeleton interment	10	29	9	1	0	2	20	71
(sum)	288	197	136	130	137	65	173	1126

Table 4-52 Distribution of types of interments at seven Calatagan sites.

In terms of age, adults comprised the majority, 567 cases or 66.8 per cent of 847 individuals for whom age could be determined. Child burials (151 cases, 17.8%) were slightly more numerous than the juveniles (117 cases, 13.8%). Infant common inhumations had only 13 cases (1.5%). Only 26 females and 20 males were identified; most were adults, except for two juvenile females and one juvenile male.

Among the 567 adult common inhumations, 198 had traces of tooth-filing and 66 did not. However, for more than half of the common inhumations (302 cases) tooth-filing could not be recognised; it is thus difficult to say if tooth-filing was popular in ancient Calatagan. From the 37 recognizable cases of both upper and lower jaws, there is a clear pattern in tooth-filing: it was most common (17 cases, 45.9%) to have tooth-filing on both jaws and the numbers of filed teeth were the same. Among them, 6U6L pattern was the most popular (12 cases). On the other hand, in those cases where the

number of filed teeth was different on the upper and lower jaw, the preference was to have more teeth filed on the upper jaw than on the lower: there were 15 cases in which more upper teeth were filed than lower teeth, and five cases with more lower teeth filed. For either the upper or lower jaw, it was significant to have an even number of teeth filed. There were only five cases (13.5%) with an odd number of teeth filed.

There was a total of 1991 grave goods from the 912 common inhumations in Calatagan: 788 earthenware vessels, 863 trade ceramic vessels and 340 miscellaneous goods. In general, more than 70 per cent of the burials (653 cases) had at least one item, and nearly half of the burials (444 cases, 48.7%) contained one to three items. In terms of earthenwares, more than half of the burials (515 cases, 56.5%) had one item or more. The total quantity of trade ceramics (863 items) is higher than earthenwares (788 items), but there were slightly more common inhumations without trade ceramics (485 cases, 53.2%) than without earthenwares (396 cases, 43.5%).

Uncommon inhumations

Headless supine burials

Headless supine burials comprised the largest portion of uncommon human remain interments, and were the only ones encountered across all seven sites. The 50 burials had 97 items: 25 earthenwares, 52 trade ceramics and 20 miscellaneous goods. They were orientated in six directions: the north was the most common (11 cases), followed by the northeast (10 cases), the southeast (9 cases), the south (7 cases), the east (6 cases), the southwest (5 cases), and even the west had one case. In terms of age groups, it is quite clear that headless burials were mostly adults (39 cases, 88.6%); except for five juvenile cases (11.4%), there were no cases of child or infant headless burials.

In regard to grave goods, 32 out of 50 burials (64%) had at least one item: 17 burials (34%) had earthenwares, 27 burials (54%) had trade ceramics and 14 burials (28%) had miscellaneous goods.

	N	NE	E	SE	S	SW	W	NW	Unknown	Sum
Count	11	10	6	9	7	5	1	0	1	50
Percentage	22.4%	20.4%	12.2%	18.4%	14.3%	10.2%	2.0%	0		
Common	200 (23.7%)	140 (16.6%)	170 (20.1%)	124 (14.7%)	150 (17.8%)	35 (4.1%)	5 (0.6%)	21 (2.5%)	67	912

Table 4-53 Distribution of orientations among headless burials at seven Calatagan sites (percentage excludes unknown data).

	Adult	Juvenile	Child	Infant	Unknown	Sum
Count	39	5	0	0	6	50
Percentage	88.6%	11.4%	0	0		

Table 4-54 Distribution of age groups among headless burials at seven Calatagan sites (percentage excludes unknown data).

	0 items	1 items	2 items	3 items	4 items	5 items	6 items	7items
GG (97 items)	18 (36.0%)	5 (10.0%)	11 (22.0%)	5 (10.0%)	5 (10.0%)	2 (4.0%)	3 (6.0%)	1 (2.0%)
EA (25 items)	33 (66.0%)	10 (20.0%)	6 (12.0%)	1 (2.0%)	0	0	0	0
TC (52 items)	23 (46.0%)	10 (20.0%)	12 (24.0%)	2 (4.0%)	3 (6.0%)	0	0	0
MS (20 items)	36 (72.0%)	9 (18.0%)	4 (8.0%)	1 (2.0%)	0	0	0	0

Table 4-55 Distribution of headless burials with/without grave goods at seven Calatagan sites.

Semi-flexed position burials

Twenty-two semi-flexed position burials were encountered at four of the Calatagan sites. In terms of orientation, they were similar to common inhumations; more than 95 per cent of the burials were orientated in five directions: the north was the most common (6 cases, 27.3%), followed by the south (5 cases, 22.7%), then the east (4 cases, 18.2%) and finally the northeast and the southeast (3 cases each, 13.6%). In addition, more than half were adults (11 cases, 52.4%), with only four juveniles (19.0%) and six children (28.6%). Almost 40 per cent of semi-flexed burials (13 out of 22) had one or more grave goods.

	N	NE	E	SE	S	SW	W	NW	Unknown	Sum
Count	6	3	4	3	5	1	0	0	0	22
Percentage	27.3%	13.6%	18.2%	13.6%	22.7%	4.5%				

Table 4-56 Distribution of orientations among semi-flexed position burials at seven Calatagan sites (percentage excludes unknown data).

	Adult	Juvenile	Child	Infant	Unknown	Sum
Count	11	4	6	0	1	22
Percentage	50.0%	18.2%	27.3%		4.5%	

Table 4-57 Distribution of age groups among semi-flexed position burials at seven Calatagan sites (percentage excludes unknown data).

	0 items	1 items	2 items	3 items	4 items	5 items	6 items	8 items
GG (24 items)	13 (%)	4 (%)	0	4 (%)	0	0	0	1 (%)
EA (10 items)	14 (%)	6 (%)	2 (%)	0	0	0	0	0
TC (11 items)	17 (%)	2 (%)	2 (%)	0	0	1 (%)	0	0
MS (3 items)	20 (%)	1 (%)	1 (%)	0	0	0	0	0

Table 4-58 Distribution of semi-flexed position burials with/without grave goods at seven Calatagan sites.

Skull-only burial

Ten skull-only burials were encountered at five of the Calatagan sites, together with five grave goods. Among them four skulls were from adults and one was from a juvenile; five cases were unrecognisable. Two skulls had one earthenware each, one case had one trade ceramic vessel, and one skull had one earthenware and one trade ceramic.

Jar burial

A total of 21 single jar burials were found at four of the Calatagan sites. They were all infants, except one case had no data on the skeleton. Most of them (18 cases) were in imported stoneware jars, including 14 Chinese wares, three Thai wares, and one of unknown provenance. There were only two cases of earthenware jar burials, and one case had no data on the burial jar. Eight burial jars had trade ceramics as jar covers: two bowls, two plates, three saucers, and one unknown type. Except for the burial jar and jar cover, there were only six cases with other grave goods: three of them had one extra trade ceramic, and three had many other earthenwares and trade ceramics.

Multiple graves

There were 35 multiple graves in Calatagan, with different combinations: roughly 30 multiple inhumation graves, four inhumation jar burial graves and one multiple jar burial.

The most popular combination in the 30 multiple inhumation graves was two common inhumations together: 11 cases from six sites. Among these 11, six were one adult buried with a child (5 cases) or infant (1 case), two were one child with one infant, one was one adult with one juvenile, and one was two adults together. Eight out of 11 cases had grave goods.

The combination of a common inhumation with an extra skull was the second most popular combination in multiple graves: eight cases from four sites.

Non-skeleton interments

Non-skeleton interment was the most popular "uncommon" interment encountered in Calatagan. There were 144 grave items found in the 71 interments from six of the sites, including 75 earthenwares, 57 trade ceramics and 12 miscellaneous goods.

CHAPTER FIVE
ANALYSIS:
THE HYPOTHESISED RELATIONSHIPS BETWEEN TRADE CERAMICS AND EARTHENWARE

In the theoretical and methodological debates of Chapter Two, I emphasise that the proper way to comprehend the social value of material objects is to investigate their context in specific social settings. In practical terms, social value might correspond to, or be represented by, differentiation in social use. Thus, this research sets the initial question as: were trade ceramics a type of prestige good superior in social status to local earthenwares? I also develop a series of hypothesised relationships to investigate the use patterns of trade ceramics and earthenwares.

The following analysis is split into two parts: the first part tests the five hypothesised relationships on the common inhumations which comprise more than 80 per cent of the Calatagan burials. These five hypothesised relationships can be summarized as follows: the quantity relationship assumes that there exists an inverse relationship between the numbers of trade ceramics and earthenwares in a burial. The association relationship suggests that if certain types of objects are often found together with a specific group of objects, a similarity in the value system might be inferred. The location relationship notices the importance of spatiality in understanding the value system and examines whether certain types of pottery vessels are placed at specific body positions. The gradation relationship proposes that a possible hierarchy of pottery vessels can be observed in their different spatial distributions. Finally, the imitation relationship suggests that imitation earthenwares might be inferior to authentic trade ceramics, but their use pattern should be close to trade ceramics rather than to other common earthenwares. The analyses are conducted on two sets of data, burials and

pottery vessels, respectively: a) the relationships of quantity and association consider burials with different frequencies of pottery vessels; and b) the relationships of location and gradation apply to the spatial arrangement of various types of pottery vessels according to specific body positions. The imitation relationship takes both into account.

The second part of the analysis takes specific variables into account: whether there existed differences in the numbers of trade ceramics or earthenwares among various age groups; between presence/absence of tooth-filing; among different body orientations; and variations among the seven sites. It will also compare common inhumations with uncommon burials, using headless burials as an example. These variables were chosen not only because they are available from the database, but also because they could represent certain social relationships. Due to the smaller sample size, this part of the analysis will only test the hypothesised relationships of quantity. Through examining these hypothesised relationships, it is possible to answer whether trade ceramics were more valuable than earthenwares, and to understand how the value of trade ceramics was materialised.

Part 1: Analysis count on human inhumations

QUANTITY

In general, common inhumations with earthenwares were more frequent than those with trade ceramics (Table 5-1): 515 burials (56.5% of total common inhumations) had at least one earthenware vessel, while 427 (46.8%) had at least one trade ceramic. Moreover, burials containing both trade ceramics and earthenwares were most common (34.5%), followed by burials without any pottery vessels (31.3%), then by burials with earthenwares but without trade ceramics (21.9%), and finally by burials with only trade ceramics (12.3%). This distribution pattern seems to indicate that burials with trade pottery vessels were more likely to have earthenware vessels than those without trade ceramics. Among the 427 burials with at least one trade pottery vessel, nearly three quarters (73.8%) contained at least one item of earthenware, but only one quarter (26.2%) was without earthenware. On the contrary, for the 485 burials without trade ceramics, more than half (58.8%) had no earthenwares. Thus, it is reasonable to suggest that there existed a positive relationship between trade ceramics and earthenwares.

A chi-squared test suggests that the distribution of burials with and without trade ceramics across burials with and without earthenwares is significantly different ($\chi^2=97.84>\chi^2_{1-0.05(1*1)}=3.84$, Table 5-1). Moreover, a very strong positive Yule's Q coefficient value (Q =0.60) indicates that burials with trade ceramics tend to have earthenwares. This kind of positive association is further supported by Kendall's τ coefficient of rank correlation (τ=0.304, Table 5-2); although the correlation value is small, it is significant even at the 0.01 level.

However, since the correlation coefficient reflects the strength of the relationship between two variables, the low value of Kendall's τ coefficient implies that the quantity relationship between trade ceramics and earthenwares is not a perfect positive correlation. It is, therefore, necessary to look into their distribution pattern in detail.

As seen in Table 5-2, for burials without trade ceramics (485 cases), nearly 60 per cent (285 cases) had no earthenwares, 40 per cent (194 cases) had one or two earthenwares, and only 1.2 per cent (6 cases) had three or more earthenwares. On the contrary, for burials with only one trade ceramic (188 cases), 30 per cent (57 cases) had no earthenwares, more than 60 per cent (119 cases) had one or two earthenwares, and only 6.4 per cent (12 cases) had three or more earthenwares. A similar pattern occurred among those burials with two or more trade ceramics: between 16.7 per cent (3 out of 18 cases for those with 5 trade ceramics) and 33.3 per cent (1 out of 3 cases for those with 6 trade ceramics) had no earthenwares, between 60 per cent (3 out of 5 cases for those with 7 trade ceramics) and 73.2 per cent (41 out of 56 cases for those with 3 trade ceramics) had one or two earthenwares, and 3.8 per cent (5 out of 132 cases for those with 2 trade ceramics) and 20 per cent (1 out of 5 cases for those with 7 trade ceramics) contained three or more earthenwares, except for burials with six trade ceramics.

A chi-squared test further supports this observation. Considering the sample size of each cell for the chi-squared test, data in Table 5-2 are classified into three categories (see Table 5-3): burials without pottery vessels, burials with few vessels (1-2 items), and burials with three and more vessels. A chi-squared test reveals that there is a significant difference between common inhumations with different quantities of trade ceramics and those with different quantities of earthenwares ($\chi^2=109.59>\chi^2_{1-0.05(2*2)}=9.49$, Table 5-3).

However, when burials without pottery vessels are excluded, the chi-squared test and Yule's Q coefficient of the distribution of burials containing few and more items of trade ceramics across few and more earthenwares ($\chi^2=1.26<\chi^2_{1-0.05(1*1)}=3.84$; $Q=0.23$, Table 5-4) points out that burials with more trade ceramics are not likely to have more earthenwares.

In other words, the statistical results clearly suggest, with regard to quantity of pottery vessels in common inhumations, that there is no reverse relationship between trade ceramics and earthenwares. On the contrary, both positive values of Yule's Q coefficient and Kendall's τ coefficient suggest that a burial with trade ceramics more often has earthenwares. Therefore, there is no trend that burials with more trade ceramics are likely to have more earthenwares. For those burials with trade ceramics, no matter how many items of trade ceramics a burial contained, most had one or two items of earthenwares, while burials without earthenwares were few, and those with three or more earthenwares were rare. Thus, it is difficult to argue that trade ceramics had a superior status compared to local earthenwares in terms of the hypothesised relationship of quantity.

	Burials without TC	Burials with TC	Sum
Burials without EA	**285 (31.3%)**	**112 (12.3%)**	**397 (43.5%)**
Burials with EA	**200 (21.9%)**	**315 (34.5%)**	**515 (56.5%)**
Sum	**485 (53.2%)**	**427 (46.8%)**	**912 (100%)**

Table 5-1 Cross-tabulation of common inhumations showing burials with/without trade ceramics and earthenwares at seven Calatagan sites (χ^2=97.84>$\chi^2_{1\text{-}0.05(1*1)}$=3.84; phi-squared value ϕ^2= 0.11; Yule's Q =0.60).

EA\TC	0 TC	1 TC	2 TCs	3 TCs	4 TCs	5 TCs	6 TCs	7 TCs	Sum
0 EA	**285 (31.3%)**	**57 (6.3%)**	**35 (3.8%)**	**10 (1.1%)**	**5 (0.5%)**	**3 (0.3%)**	**1 (0.1%)**	**1 (0.1%)**	**397 (43.5%)**
1 EA	**125 (13.7%)**	**70 (7.7%)**	**51 (5.6%)**	**20 (2.2%)**	**6 (0.7%)**	**7 (0.8%)**	**1 (0.1%)**	**2 (0.2%)**	**282 (30.9%)**
2 EAs	**69 (7.6%)**	**49 (5.4%)**	**41 (4.5%)**	**21 (2.3%)**	**12 (1.3%)**	**6 (0.7%)**	**1 (0.1%)**	**1 (0.1%)**	**200 (21.9%)**
3 EAs	**5 (0.5%)**	**11 (1.2%)**	**5 (0.5%)**	**2 (0.2%)**	**2 (0.2%)**	**2 (0.2%)**	**0**	**1 (0.1%)**	**28 (3.1%)**
4 EAs	**0**	**1 (0.1%)**	**0**	**2 (0.2%)**	**0**	**0**	**0**	**0**	**3 (0.3%)**
5 EAs	**1 (0.1%)**	**0**	**0**	**1 (0.1%)**	**0**	**0**	**0**	**0**	**2 (0.2%)**
Sum	**485 (53.1%)**	**188 (20.6%)**	**132 (14.5%)**	**56 (6.1%)**	**25 (2.7%)**	**18 (2.0%)**	**3 (0.3%)**	**5 (0.5%)**	**912 (100%)**

Table 5-2 Cross-distribution of common inhumations showing quantities of trade ceramic and earthenware vessels at seven Calatagan sites (Kendall's τ is 0.304, which is significant at the 0.05 level).

	Without TC	With 1-2 TCs	With 3-7 TCs	Sum
Without EA	**285 (211.1)**	**92 (139.3)**	**20 (46.6)**	**397**
With 1-2 EAs	**194 (256.3)**	**211 (169.1)**	**77 (56.6)**	**482**
With 3-5 EAs	**6 (17.5)**	**17 (11.6)**	**10 (3.9)**	**33**
Sum	**485**	**320**	**107**	**912**

Table 5-3 Observed and expected numbers of common inhumations with differing quantities of trade ceramics across differing quantities of earthenwares at seven Calatagan sites (χ^2=109.59>$\chi^2_{1\text{-}0.05(2*2)}$=9.49; phi-squared value ϕ^2= 0.12; Number in parentheses is expected count).

	Burials with 1-2 TCs	Burials with 3-7 TCs	Sum
Burials with 1-2 EAs	**211 (208.5)**	**77 (79.5)**	**288**
Burials with 3-5 EAs	**17 (19.5)**	**10 (7.5)**	**27**
Sum	**228**	**87**	**315**

Table 5-4 Observed and expected numbers of common inhumations with few/more items of trade ceramics across few/more items of earthenwares at seven Calatagan sites (χ^2=1.26<$\chi^2_{1\text{-}0.05(1*1)}$=3.84; phi-squared value ϕ^2= 0.004; Yule's Q value Q =0.23).

ASSOCIATION

According to the hypothesised relationship of association, burials with metal tools or glass adornments should more often have trade ceramics, or have even more trade ceramics, than those burials without metal or glass objects. It is assumed that the distribution of burials with and without clay spindle whorls across differing frequencies of trade ceramics is not different. In comparison, it is hypothesised that the distribution of burials with metal, glass, or clay objects across differing frequencies of earthenwares is not different from those burials without metal, glass, or clay objects.

In regard to the general distribution pattern (107 cases, see Figure 5-1), approximately 30 per cent of the common inhumations with clay spindle whorls had no trade ceramics. Forty-five per cent of burials had one or two trade ceramics, and slightly more than a quarter contained three or more trade ceramics. In contrast, nearly a quarter of them had no earthenwares, and more than 70 per cent of the burials contained one or two items of earthenwares. Less than 5 per cent of the burials had three earthenwares.

For common inhumations with metal tools (23 cases, see Figure 5-2), almost 40% of them had no trade ceramics as grave goods. Moreover, there were approximately only a quarter with one or two trade ceramics; 35 per cent of burials had three or more trade ceramics. On the contrary, only 17 per cent lacked earthenwares, and nearly three quarters had one or two earthenwares. Fewer than 9 per cent had three earthenwares.

In terms of common inhumations with glass adornments (34 cases, see Figure 5-3), 38 per cent had no trade ceramics. However, almost 45 per cent had one or two items

of trade ceramics, and 18 per cent had three or more items. Half had no earthenware and half had one or two earthenwares. None had three or more earthenwares.

With regard to common inhumations with clay spindle whorls, chi-squared tests show that their distribution across differing frequencies of pottery vessels is significantly different from those burials without spindle whorls: this is the case both for trade ceramics ($\chi^2=38.02>\chi^2_{1-0.05(1*2)}=5.99$, see Table 5-5), and earthenwares ($\chi^2=18.65>\chi^2_{1-0.05(1*2)}=5.99$, see Table 5-7).

In terms of metal tools, chi-squared tests reveal slightly different results. The distribution of burials with and without metal tools across differing quantities of pottery vessels is different, but at diverse levels. For burials with trade ceramics, it is significantly different ($\chi^2=12.11>\chi^2_{1-0.05(1*2)}=5.99$, see Table 5-9). It thus appears that burials with or without metal tools are not distributed in the same way across the differing quantities of trade ceramics. Similarly, for burials with earthenwares, the chi-squared test result rejects the null hypothesis ($\chi^2=7.36>\chi^2_{1-0.05(1*2)}=5.99$, see Table 5-11), although it is not significant at the 0.01 level ($\chi^2=7.36<\chi^2_{1-0.01(1*2)}=9.21$).

Finally, for the common inhumations containing glass adornments, chi-squared tests show very different results from clay spindle whorls and metal tools. The distribution of burials with and without glass adornments across differing frequencies of trade ceramics ($\chi^2=3.36<\chi^2_{1-0.05(1*2)}=5.99$, see Table 5-13), and also earthenwares ($\chi^2=1.67<\chi^2_{1-0.05(1*2)}=5.99$, see Table 5-14), is not significantly different.

The chi-squared tests reveal that the distributions of common inhumations with three types of miscellaneous grave goods across different frequencies of pottery vessels, have more complicated patterns than expected. First, it appears that burials with and

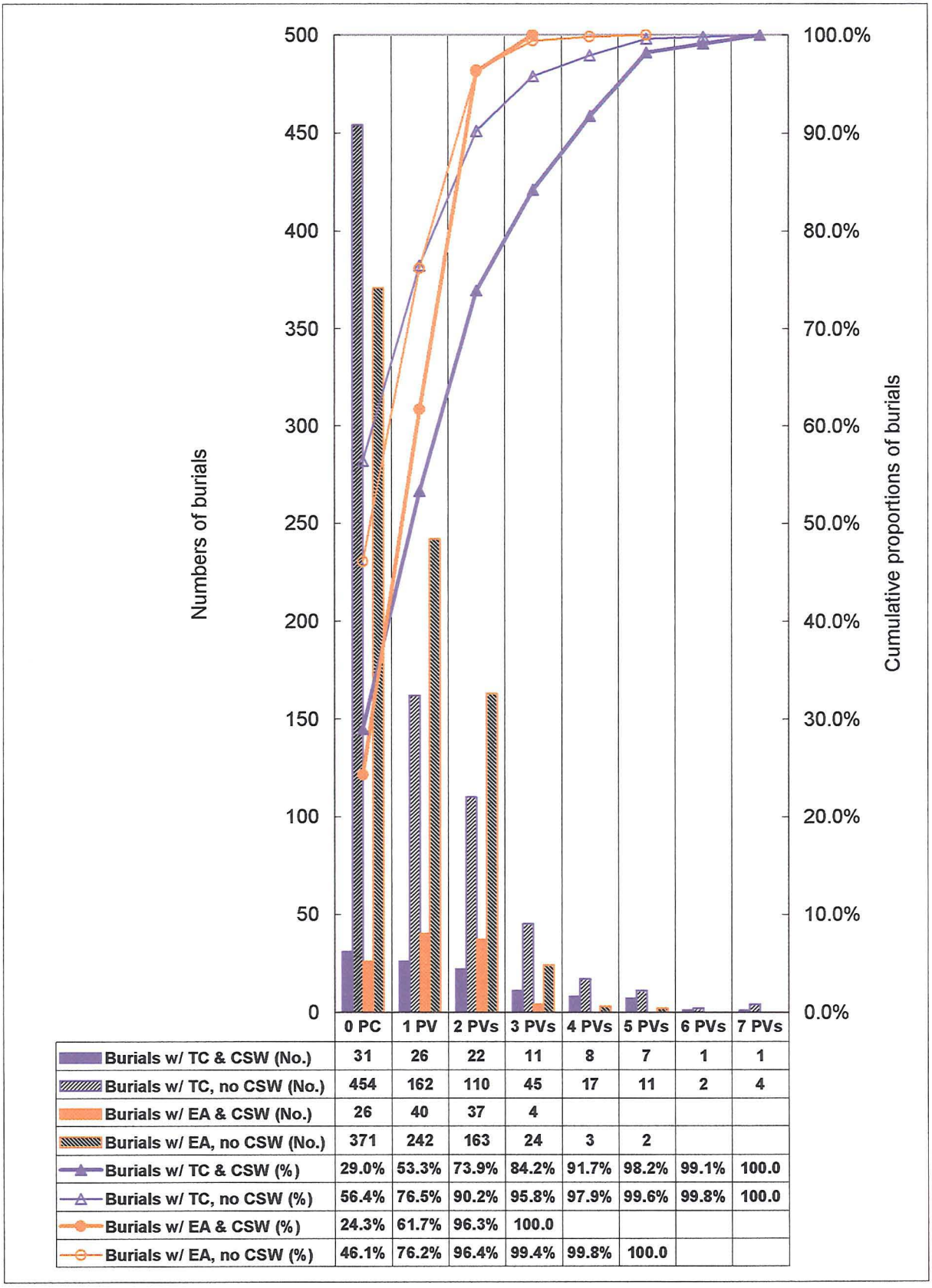
without metal tools were not distributed in the same way over differing frequencies of trade ceramics, which is as expected. A strongly positive Yule's Q value[1] (0.62, see Table 5-10) further suggests that burials with three or more items of trade ceramics tend to have metal tools, but there is no difference of burials with and without metal tools across few items of trade ceramics and burials without any items (χ^2=0, Q=0.01). In regard to the distribution of burials with and without glass adornments across differing frequencies of trade ceramics, the null hypothesis is accepted. That is, burials with and without glass adornments are distributed in the same way over the differing frequencies of trade ceramics. On the other hand, a chi-squared value rejects the null hypothesis of the distribution of burials with and without clay spindle whorls across differing frequencies of trade ceramics; in other words, it is not different. The Yule's Q value of the distribution of burials with presence or absence of clay spindle whorls across more and fewer trade ceramics (Q=0.34, see Table 5-6), also between fewer and no items (Q=0.44), indicates that burials with clay spindle whorls tend to have more items of trade ceramics.

In terms of burials with earthenwares, chi-squared analysis also reveals controversial results. Although burials with and without glass adornments are distributed in the same way over the differing frequencies of earthenwares, as expected, the distribution of burials with and without metal tools across differing frequencies of earthenwares is different at the 0.05 level. For burials with clay spindle whorls, the chi-squared value is significant even at the 0.01 level. For both cases, burials with and without metal tools or clay spindle whorls are distributed in the same way over the more and few items of earthenwares, but the distribution of burials with and without metal

[1] Since Yule's Q is only available for the 2*2 table, the following analysis divides 2*3 table as two 2*2 table which will compare burials with more (3-7) and few (1-2) items, as well as burials with few items and no pottery vessels.

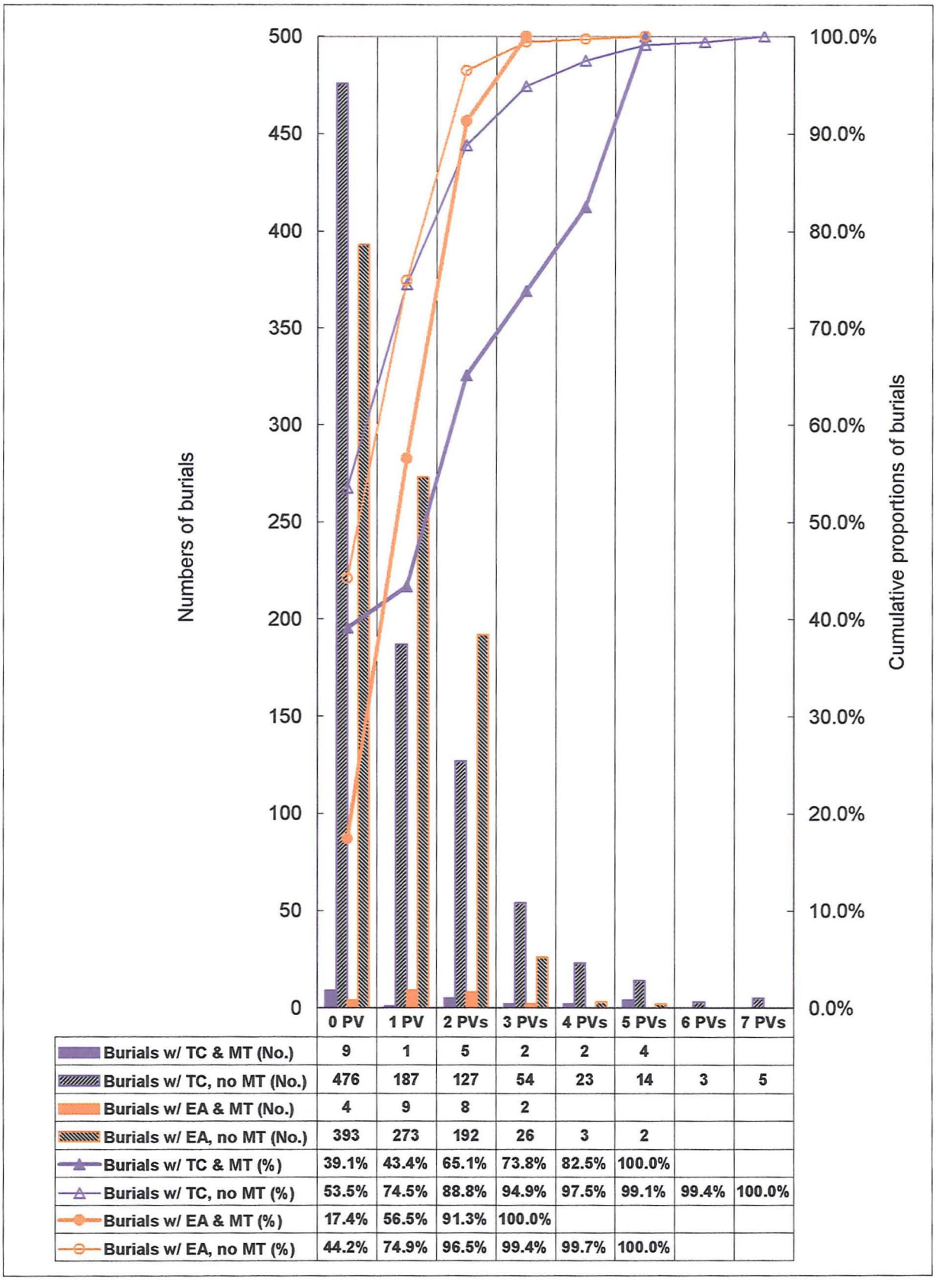
tools or clay spindle whorls across no items and one to two items is significantly different. Yule's Q coefficients also suggest that burials with metal tools (Q=0.56), or with clay spindle whorls (Q=0.46), tend to have one or two earthenwares.

In short, burials containing metal tools tend to have three or more items of trade ceramics, and one or two earthenwares; this fits with the expectation. On the other hand, the distribution of clay spindle whorls has the same pattern as metal tools, but burials with and without glass adornments are distributed in the same way over differing quantities of trade ceramics, as well as over earthenwares. The last two cases are contrary to the expectations.



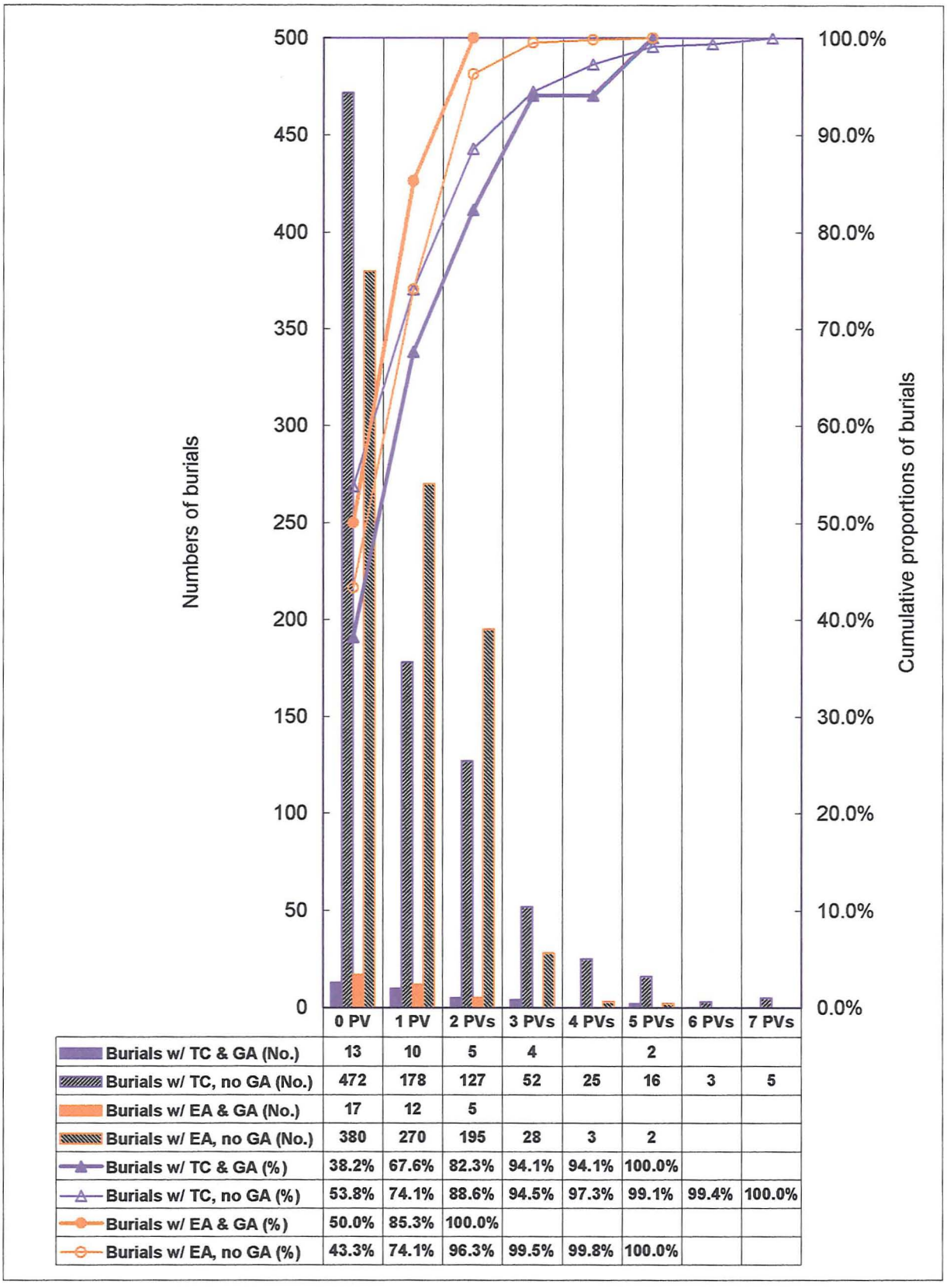
	0 PC	1 PV	2 PVs	3 PVs	4 PVs	5 PVs	6 PVs	7 PVs
Burials w/ TC & CSW (No.)	31	26	22	11	8	7	1	1
Burials w/ TC, no CSW (No.)	454	162	110	45	17	11	2	4
Burials w/ EA & CSW (No.)	26	40	37	4				
Burials w/ EA, no CSW (No.)	371	242	163	24	3	2		
Burials w/ TC & CSW (%)	29.0%	53.3%	73.9%	84.2%	91.7%	98.2%	99.1%	100.0
Burials w/ TC, no CSW (%)	56.4%	76.5%	90.2%	95.8%	97.9%	99.6%	99.8%	100.0
Burials w/ EA & CSW (%)	24.3%	61.7%	96.3%	100.0				
Burials w/ EA, no CSW (%)	46.1%	76.2%	96.4%	99.4%	99.8%	100.0		

Figure 5-1 Numbers (No.) and cumulative (%) proportions of common inhumations with clay spindle whorls (CSW), showing differing quantities of pottery vessels (PV), trade ceramics (TC) or earthenwares (EA).



	0 PV	1 PV	2 PVs	3 PVs	4 PVs	5 PVs	6 PVs	7 PVs
Burials w/ TC & MT (No.)	9	1	5	2	2	4		
Burials w/ TC, no MT (No.)	476	187	127	54	23	14	3	5
Burials w/ EA & MT (No.)	4	9	8	2				
Burials w/ EA, no MT (No.)	393	273	192	26	3	2		
Burials w/ TC & MT (%)	39.1%	43.4%	65.1%	73.8%	82.5%	100.0%		
Burials w/ TC, no MT (%)	53.5%	74.5%	88.8%	94.9%	97.5%	99.1%	99.4%	100.0%
Burials w/ EA & MT (%)	17.4%	56.5%	91.3%	100.0%				
Burials w/ EA, no MT (%)	44.2%	74.9%	96.5%	99.4%	99.7%	100.0%		

Figure 5-2 Numbers (No.) and cumulative proportions (%) of common inhumations with metal tools (MT), showing differing quantities of pottery vessels (PV), trade ceramics (TC) or earthenwares (EA).



	0 PV	1 PV	2 PVs	3 PVs	4 PVs	5 PVs	6 PVs	7 PVs
Burials w/ TC & GA (No.)	13	10	5	4		2		
Burials w/ TC, no GA (No.)	472	178	127	52	25	16	3	5
Burials w/ EA & GA (No.)	17	12	5					
Burials w/ EA, no GA (No.)	380	270	195	28	3	2		
Burials w/ TC & GA (%)	38.2%	67.6%	82.3%	94.1%	94.1%	100.0%		
Burials w/ TC, no GA (%)	53.8%	74.1%	88.6%	94.5%	97.3%	99.1%	99.4%	100.0%
Burials w/ EA & GA (%)	50.0%	85.3%	100.0%					
Burials w/ EA, no GA (%)	43.3%	74.1%	96.3%	99.5%	99.8%	100.0%		

Figure 5-3 Numbers (No.) and cumulative proportions (%) of common inhumations with glass adornments (GA), showing differing quantities of pottery vessels (PV), trade ceramics (TC) or earthenwares (EA).

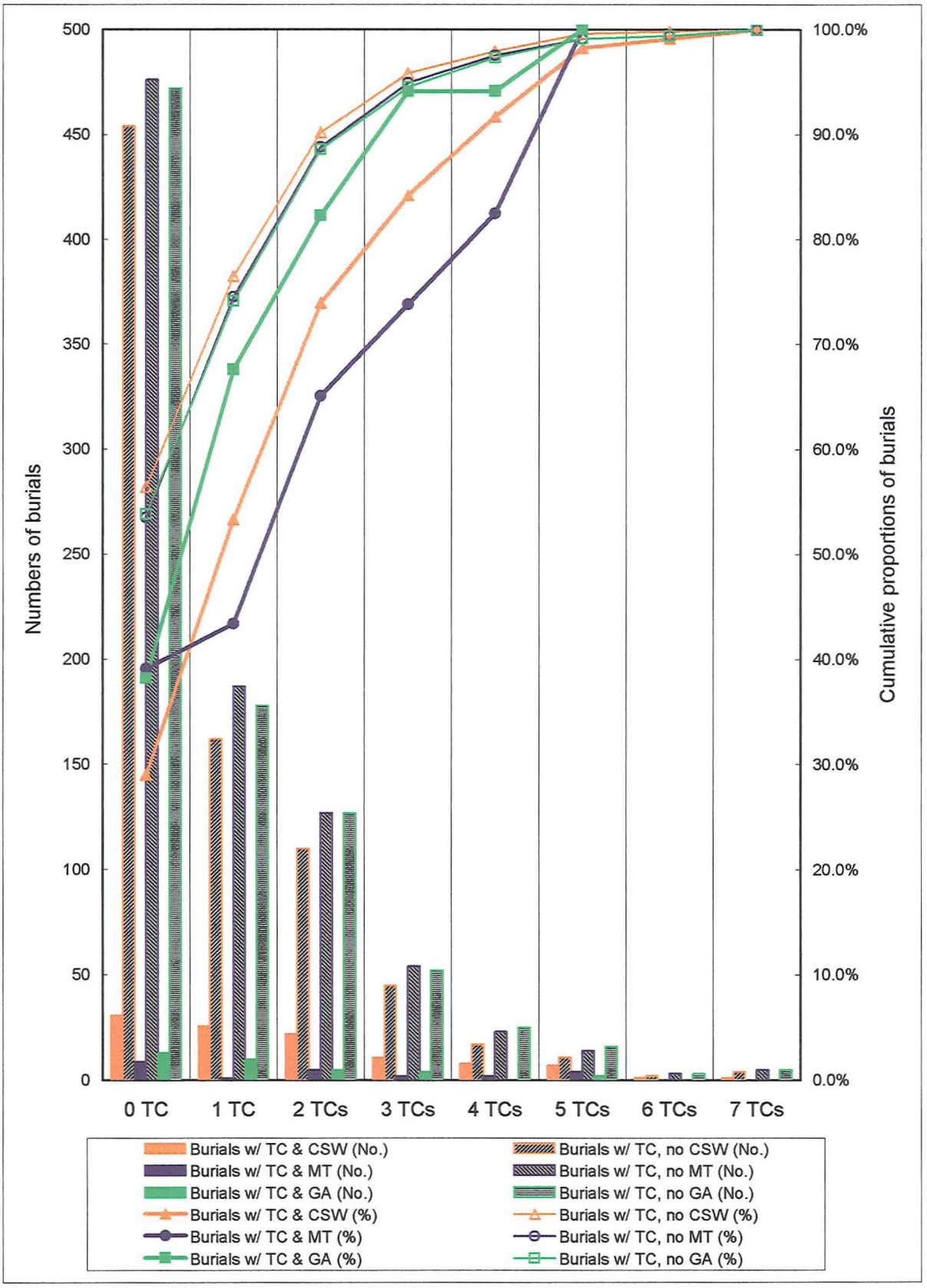


Figure 5-4 Numbers (No.) and cumulative proportions (%) of common inhumations with clay spindle whorls (CSW), metal tools (MT), and glass adornments (GA), showing differing quantities of trade ceramics (TC).

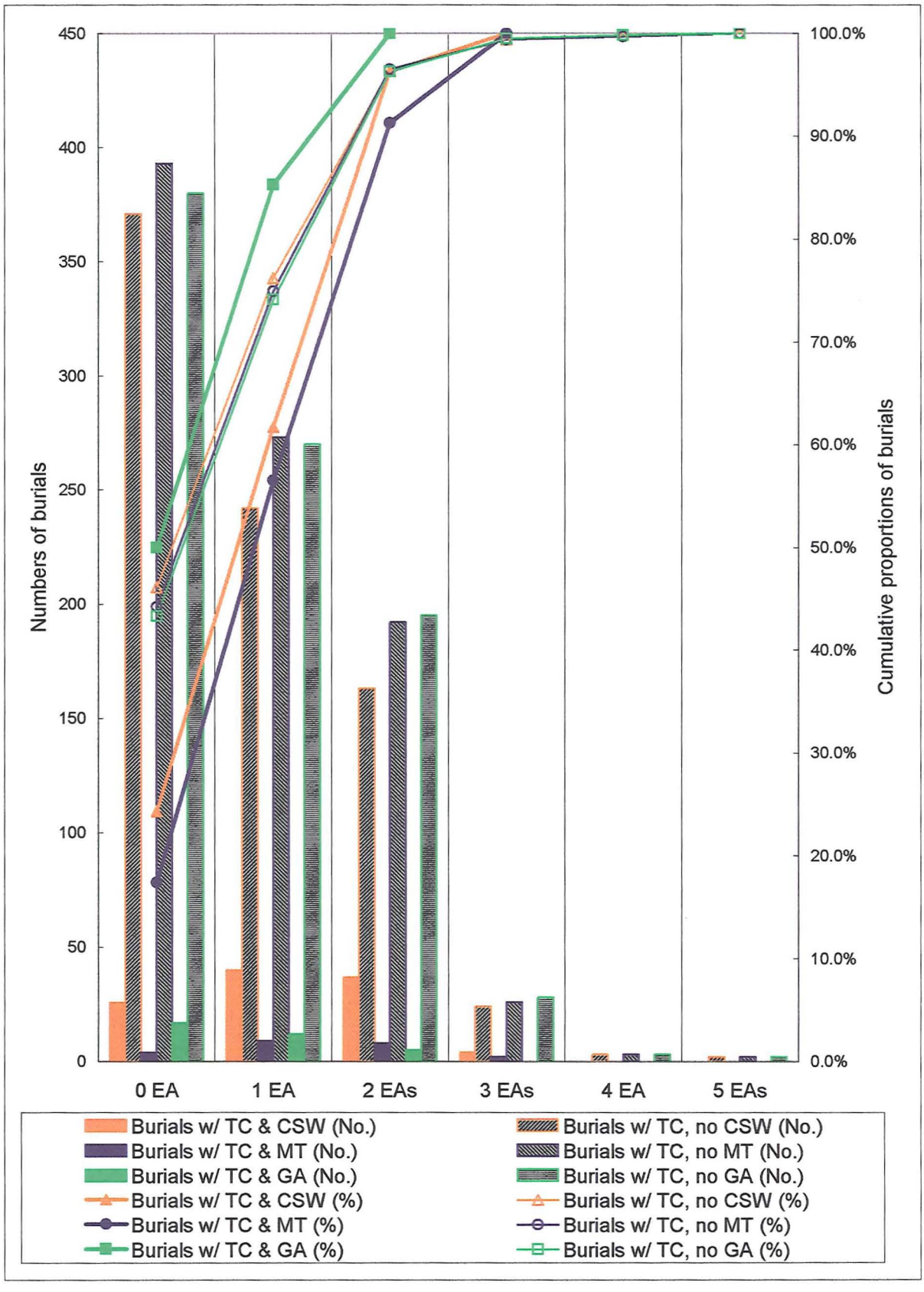


Figure 5-5 Numbers (No.) and cumulative proportions (%) of common inhumations with clay spindle whorls (CSW), metal tools (MT), and glass adornments (GA), showing differing quantities of earthenwares (EA).

	Burials with clay spindle whorls	Burials without clay spindle whorls	Sum
Burials with 3-7 trade ceramics	**28 (12.6)**	**79 (94.4)**	**107**
Burials with 1-2 trade ceramics	**48 (37.5)**	**272 (282.5)**	**320**
Burials without trade ceramics	**31 (56.9)**	**454 (428.1)**	**485**
Sum	**107**	**805**	**912**

Table 5-5 Observed and expected numbers of common inhumations with/without clay spindle whorls across differing quantities of trade ceramics at seven Calatagan sites (χ^2=38.02>$\chi^2_{1\text{-}0.05(1*2)}$=5.99. Number in parentheses is expected count).

	Burials with clay spindle whorls	Burials without clay spindle whorls	Sum
Burials with more trade ceramics (3-7 items)	**28 (19)**	**79 (88)**	χ^2=6.84>$\chi^2_{1\text{-}0.05(1*1)}$=3.84
Burials with few trade ceramics (1-2 items)	**48 (57)**	**272 (263)**	ϕ^2=0.02 Q=0.34
Burials with few trade ceramics (1-2 items)	**48 (31.4)**	**272 (288.6)**	χ^2=16.14>$\chi^2_{1\text{-}0.05(1*1)}$=3.84
Burials without trade ceramics	**31 (47.6)**	**454 (437.4)**	ϕ^2=0.02 Q=0.44

Table 5-6 Comparison of burials with differing frequencies of trade ceramics tabulated against presence/absence of clay spindle whorls at seven Calatagan sites (ϕ^2 as phi-squared value; Q as Yule's Q value. Number in parentheses is expected count).

	Burials with clay spindle whorls	Burials without clay spindle whorls	Sum
Burials with 3-5 earthenwares	**4 (3.9)**	**29 (29.1)**	**33**
Burials with 1-2 earthenwares	**77 (56.6)**	**405 (425.4)**	**482**
Burials without earthenware	**26 (46.6)**	**371 (350.4)**	**397**
Sum	**107**	**805**	**912**

Table 5-7 Observed and expected numbers of common inhumations with/without clay spindle whorls across differing quantities of earthenwares at seven Calatagan sites (χ^2=18.65>$\chi^2_{1\text{-}0.05(1*2)}$=5.99. Number in parentheses is expected count).

	Burials with clay spindle whorls	Burials without clay spindle whorls	Sum
Burials with more earthenwares (3-5 items)	**4 (5.2)**	**29 (27.8)**	χ^2=0.35<$\chi^2_{1\text{-}0.05(1*1)}$=3.84
Burials with few earthenwares (1-2 items)	**77 (75.8)**	**405 (406.2)**	
Burials with few earthenwares (1-2 items)	**77 (56.5)**	**405 (425.5)**	χ^2=18.7>$\chi^2_{1\text{-}0.05(1*1)}$=3.84
Burials without earthenwares	**26 (46.5)**	**371 (350.5)**	ϕ^2=0.02 Q=0.46

Table 5-8 Comparison of burials with differing frequencies of earthenwares tabulated against presence/absence of clay spindle whorls at seven Calatagan sites (ϕ^2 as phi-squared value; Q as Yule's Q value. Number in parentheses is expected count).

	Burials with metal tools	Burials without metal tools	Sum
Burials with 3-7 trade ceramics	**8** (2.7)	**99** (104.3)	**107**
Burials with 1-2 trade ceramics	**6** (8.1)	**314** (311.9)	**320**
Burials without trade ceramics	**9** (12.2)	**476** (472.8)	**485**
Sum	**23**	**889**	**912**

Table 5-9 Observed and expected numbers of common inhumations with/without metal tools across differing quantities of trade ceramics at seven Calatagan sites ($\chi^2=12.11>\chi^2_{1-0.05(1*2)}=5.99$. Number in parentheses is expected count).

	Burials with metal tools	Burials without metal tools	Sum
Burials with more trade ceramics (3-7 items)	**8** (3.5)	**99** (103.5)	$\chi^2=7.93>\chi^2_{1-0.05(1*1)}=3.84$
Burials with few trade ceramics (1-2 items)	**6** (10.5)	**314** (309.5)	$\phi^2=0.02$ $Q=0.62$
Burials with few trade ceramics (1-2 items)	**6** (6)	**314** (314)	$\chi^2=0$
Burials without trade ceramics	**9** (9)	**476** (476)	$\phi^2=0$ $Q=0.01$

Table 5-10 Comparison of burials with differing frequencies of trade ceramics tabulated against presence/absence of metal tools at seven Calatagan sites (ϕ^2 as phi-squared value; Q as Yule's Q value. Number in parentheses is expected count).

	Burials with metal tools	Burials without metal tools	Sum
Burials with 3-5 earthenwares	**2** (0.8)	**31** (32.2)	**33**
Burials with 1-2 earthenwares	**17** (12.2)	**465** (469.8)	**482**
Burials without earthenware	**4** (10.0)	**393** (387.0)	**397**
Sum	**23**	**889**	**912**

Table 5-11 Observed and expected numbers of common inhumations with/without metal tools across differing quantities of earthenwares at seven Calatagan sites ($\chi^2=7.36>\chi^2_{1-0.05(1*2)}=5.99$. Number in parentheses is expected count).

	Burials with metal tools	Burials without metal tools	Sum
Burials with more earthenware (3-5 items)	**2** (1.2)	**31** (31.8)	$\chi^2=0.56<\chi^2_{1-0.05(1*1)}=3.84$
Burials with few earthenwares (1-2 items)	**17** (17.8)	**465** (464.2)	
Burials with few earthenwares (1-2 items)	**17** (11.5)	**465** (470.5)	$\chi^2=5.93<\chi^2_{1-0.01(1*1)}=6.63$ $\chi^2=5.93>\chi^2_{1-0.05(1*1)}=3.84$
Burials without earthenwares	**4** (9.5)	**393** (387.5)	$\phi^2=0.007$ $Q=0.56$

Table 5-12 Comparison of burials with differing frequencies of earthenwares tabulated against presence/absence of metal tools at seven Calatagan sites (ϕ^2 as phi-squared value; Q as Yule's Q value. Number in parentheses is expected count).

	Burials with glass adornments	Burials without glass adornments	Sum
Burials with 3-7 trade ceramics	**6 (4.0)**	**101 (103.0)**	**107**
Burials with 1-2 trade ceramics	**15 (11.9)**	**305 (308.1)**	**320**
Burials without trade ceramics	**13 (18.1)**	**472 (466.9)**	**485**
Sum	**34**	**878**	**912**

Table 5-13 Observed and expected numbers of common inhumations with/without glass adornments across differing quantities of trade ceramics at seven Calatagan sites ($\chi^2=3.36<\chi^2_{1-0.05(1*2)}=5.99$. Number in parentheses is expected count).

	Burials with glass adornments	Burials without glass adornments	Sum
Burials with 3-5 earthenwares	**0 (1.2)**	**33 (31.8)**	**33**
Burials with 1-2 earthenwares	**17 (18.0)**	**465 (464.0)**	**482**
Burials without earthenware	**17 (14.8)**	**380 (382.2)**	**397**
Sum	**34**	**878**	**912**

Table 5-14 Observed and expected numbers of common inhumations with/without glass adornments across differing quantities of earthenwares at seven Calatagan sites ($\chi^2=1.67<\chi^2_{1-0.05(1*2)}=5.99$. Number in parentheses is expected count).

LOCATION

General distribution

The hypothesised relationship of location sets the null hypothesis as the distribution of pottery vessels across various body positions is not different. There will be two levels of analysis: the first is the general distribution to reveal the pattern of pottery vessels across the ten body parts; and the second is the spatial polarities to examine three symbolic dimensions of body spatiality: on/off, right/left, and upper/lower.

The result of the chi-squared test (Table 5-16) reveals that trade ceramics and earthenwares were not distributed in the same way over the ten body parts ($\chi^2=175.31>\chi^2_{1-0.01(1*9)}=21.67$).[2] That is, there exists a strong correlation between pottery vessels, trade ceramics and earthenwares, and their locations around the body. Trade ceramics significantly occurred over the following body positions (see Table 5-15): head, chest, right palm, left palm, right knee, pelvis, and the area between the upper legs. Trade ceramics comprised more than three-quarters of the vessels in these body positions. In contrast, earthenwares did not significantly occur at specific body positions, except for some positions with a few specimens such as at the elbows and the area around the lower right arm. However, earthenwares did comprise nearly two-thirds of the pottery vessels at two places: around the head and around the feet.

Spatial polarities

The following analyses three symbolic dimensions of body spatial polarities: on/off, right/left, and upper/lower.

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[2] Chi-squared test here is based on the 10 body parts, instead of 30 body positions. Information about body positions and parts can be found in the second section of Chapter Four.

The first clear contrast is in the distribution of pottery vessels "on" the body (i.e. SK, CH, RU, LU, PV, BL, RL and LL) versus "off" (AH and AF). A chi-squared test (Table 5-17) shows that the distribution of trade ceramics and earthenwares "on" and "off" the body is significantly different (χ^2=123.36>$\chi^2_{1\text{-}0.01(1*1)}$=6.63). Further, a Yule's Q value supports that there exists a strong positive relationship (Q= 0.54) of placing trade ceramics "on" the body and earthenwares "off" the body.

With regard to right/left spatiality, a chi-squared test (Table 5-18) reveals that trade ceramics and earthenwares did not differ significantly in proportions on the right side (RU and RL) and left side (LU and LL) (χ^2=0.06<$\chi^2_{1\text{-}0.05(1*1)}$=3.84). However, it appears that trade ceramics and earthenwares were not distributed in the same way over the side body parts (right and left side together, RU+RL+LU+LL) and the central body parts (SK+CH+PV+BL) (see Table 5-19, χ^2=20.91>$\chi^2_{1\text{-}0.01(1*1)}$=6.63). A negative, though not strong, Yule's Q value (Q= -0.36) suggests that trade ceramics tend to be placed at central areas of the body and earthenwares were more likely to be to the "side" of the body.

Finally, a chi-squared test (Table 5-20) shows that the distribution of trade ceramics and earthenwares against upper body parts (SK, CH, RU, LU, and PV) and lower body parts (BL, RL, and LL) is significantly different (χ^2=38.42>$\chi^2_{1\text{-}0.01(1*1)}$=6.63). A positive Yule's Q value (Q= 0.48) indicates that trade ceramics most often occurred at the upper body, the reverse of earthenwares.

In short, the null hypothesis of location relationship is rejected; the distribution of trade ceramics and earthenwares across various body parts is significantly different.

In terms of trade ceramics, they were predominately found at the pelvis and on the skull. They were also more often placed "on" the body, and in "central" and "upper" areas.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
EA	150	51	54	14	15	2	1	8	2	1	0	16	9	1	2	21
TC	88	40	39	15	8	0	0	2	5	27	29	19	23	12	5	18
Sum	238	91	93	29	23	2	1	10	7	28	29	35	32	13	7	39
	17	18	19	20	21	22	33	44	55	66	77	88	99	100	NA	Sum
EA	36	2	5	21	29	150	22	21	8	12	10	7	7	1	110	788
TC	21	4	8	12	16	86	11	26	18	41	123	4	23	23	117	863
Sum	57	6	13	33	45	236	33	47	26	53	133	11	30	24	227	1651

Table 5-15 Distribution of earthenware and trade pottery vessels across 30 body positions among common inhumations at seven Calatagan sites.

	Around head (AH)	Head (SK)	Chest (CH)	Right upper limb (RU)	Left upper limb (LU)	Pelvis (PV)	Between legs (BL)	Right lower limb (RL)	Left lower limb (LL)	Around feet (AF)	Total
TC vessels	167 (221.2)	23 (12.6)	23 (15.7)	44 (36.2)	42 (31.5)	127 (75.5)	96 (83.4)	53 (48.8)	57 (57.1)	114 (164.6)	746
EA vessels	255 (200.8)	1 (11.4)	7 (14.3)	25 (32.8)	18 (28.5)	17 (68.5)	63 (75.6)	40 (44.2)	52 (51.9)	200 (149.4)	678
Total	422	24	30	69	60	144	159	93	109	314	1424

Table 5-16 Distribution of earthenware and trade pottery vessels at 10 body parts among common inhumations at seven Calatagan sites (χ^2=175.68>$\chi^2_{1-0.05(9*11)}$=16.92. Number in parentheses is expected count).

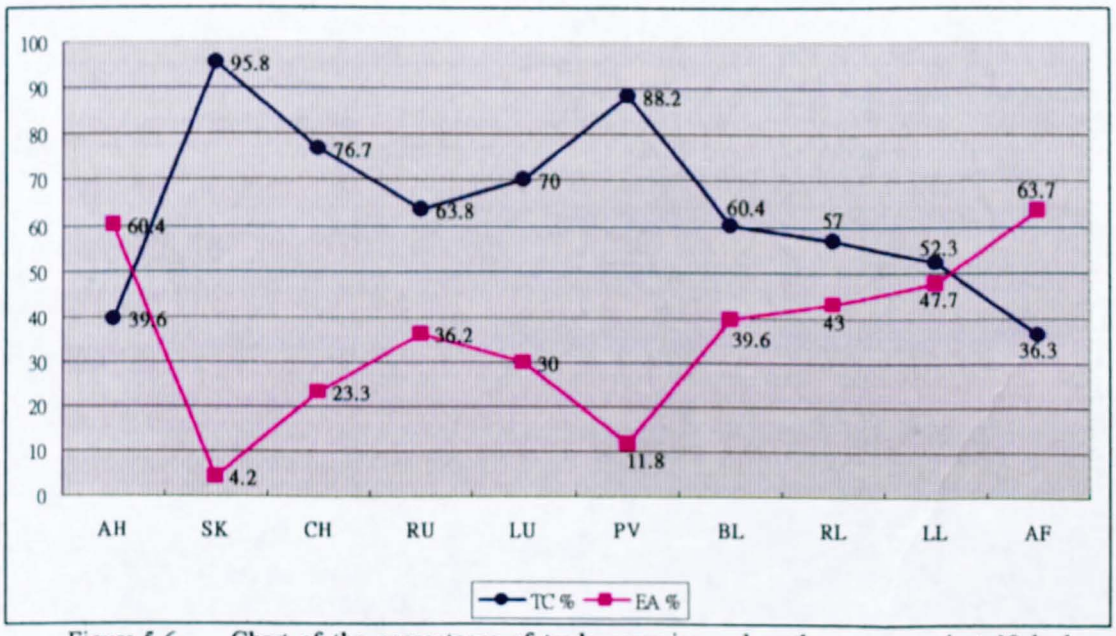


Figure 5-6 Chart of the percentages of trade ceramics and earthenwares against 10 body parts among common inhumations at seven Calatagan sites.

	Trade ceramics	Earthenwares	Sum
"On" body (SK+CH+RU+LU+PV+BL +RL+LL)	465 (360.4)	223 (327.6)	688
"Off" body (AH+AF)	281 (385.6)	455 (350.4)	736
Sum	746	678	1424

Table 5-17 Observed and expected numbers of trade ceramics and earthenwares between "on" and "off" body parts at Calatagan sites (χ^2=123.36>$\chi^2_{1-0.05(1*1)}$=3.84; ϕ^2 = 0.09; Q = 0.54; Number in parentheses is expected count).

	Trade ceramics	Earthenwares	Sum
Right body (RU+RL)	97 (95.9)	65 (66.1)	162
Left body (LU+LL)	99 (100.1)	70 (68.9)	169
Sum	196	135	331

Table 5-18 Observed and expected numbers of trade ceramics and earthenwares between right and left body parts at Calatagan sites (χ^2=0.06<$\chi^2_{1-0.05(1*1)}$=3.84. Number in parentheses is expected count).

	Trade ceramics	Earthenwares	Sum
Side body (RU+RL+LU+LL)	196 (223.7)	135 (107.3)	331
Central body (SK+CH+PV+BL)	269 (241.3)	88 (115.7)	223
Sum	465	223	688

Table 5-19 Observed and expected numbers of trade ceramics and earthenwares between side and central body parts at Calatagan sites (χ^2=20.91>$\chi^2_{1-0.05(1*1)}$=3.84; ϕ^2 = 0.03; Q = -0.36; Number in parentheses is expected count).

	Trade ceramics	Earthenwares	Sum
Upper body (SK+CH+RU+LU+PV)	259 (221)	68 (106)	327
Lower body (BL+RL+LL)	206 (244)	155 (117)	361
Sum	465	223	688

Table 5-20 Observed and expected numbers of trade ceramics and earthenwares between side and central body parts at Calatagan sites (χ^2=38.42>$\chi^2_{1-0.05(1*1)}$=3.84; ϕ^2 = 0.06; Q = 0.48; Number in parentheses is expected count).

GRADATION

This section analyses whether there is a difference among various forms of trade ceramics and earthenwares at different body positions. In general (see Table 5-21, Table 5-22 and Figure 5-7) bowls (Txx1) were the most evenly distributed form of trade ceramics across the ten body parts. No specific body part had more than 20 per cent of the bowls: mainly encountered around the head (18.4% of 299 items), around the feet (13.7%), between the legs (13.4%), on the pelvis (11.7%), and lower limbs (10% for right leg; 12% for left leg). In terms of body positions, although there were few in number, bowls still occurred at some specific places: eight bowls (out of 23 trade ceramics) found over the skull; seven bowls (out of 22) on the chest; 15 bowls (out of 27) on the right palm; and 16 bowls (out of 29) on the left palm.

Plates (Txx2), the second largest group among five forms of trade ceramics, were more likely than bowls to cluster at specific body positions. Nearly 40 per cent of them were placed at the pelvis area (70 out of 183 items). The second clustered body part, the area between the legs, had half in number (34 items), followed by the area around the feet (26 items) and around the head (16 items); other parts contained ten or less trade ceramics. With regard to body positions, plates were most common at the pelvis (57%), skull (43.5%) and chest (45.5%).

Saucers (Txx3) (69 out 702 items) were quite evenly distributed, and no specific body parts had significant numbers. However, they comprised the second quantity, only behind bowls, at the palms (5 items for the right palm, and 8 items for the left palm). Jars (Txx4) and jarlets (Txx5), two other forms, clustered at specific areas and occurred only "off" the body. Nearly three-quarters of the jars were placed around the head and around the feet (23 out of 62, 37.1%, respectively). All other areas had only three or less

jars, and none were placed at the skull. Jarlets were more clustered around the head (52.8%) than around the feet (12.4%). Lower limbs were also more likely to have jarlets than the upper part of the body (21 items at BL, RL, and LL against 10 items at from head to pelvis).

In comparison, these major forms of earthenwares (see Table 5-23, Table 5-24 and Figure 5-8) also show a significant difference across body positions. The most common *Palayok* wares (Exx1) were the only form encountered at ten body parts, and clustered around the head (34.5%) and around the feet (32.3%). The squashed-form *Kinalabasa* wares (Exx3) further concentrated around the head (50%) and around the feet (31.3%). Most of the various "imitation" earthenwares (Exx4) occurred around the head (37.3%) and around the feet (15.3%), and were more often encountered "on" the body in contrast to the two other forms.

Finally, correspondence analysis (CA) combines the above observations on trade ceramics and earthenwares, and illustrates their relationships with body positions. Figure 5-9 shows that the first axis (X-axis) and the second axis (Y-axis) clearly distinguish three types of pottery vessels from other types in terms of body positions. The X-axis can be seen as an indicator of earthenwares: the ordinary Palayok-form earthenware vessel, which is closely associated to positions around the head and around the feet, significantly differs from other forms of earthenwares. The two "imitation" forms are very close together. The Y-axis seems to show the relationships among trade ceramics: plates and bowls are clearly distinct from other trade ceramics; plates are tightly associated with the positions of pelvis and skull. Saucers are also slightly isolated from other forms, while jars and jarlets are close to *Kinalabasa* earthenwares, and miscellaneous trade ceramics are tightly associated with "imitation" earthenwares.

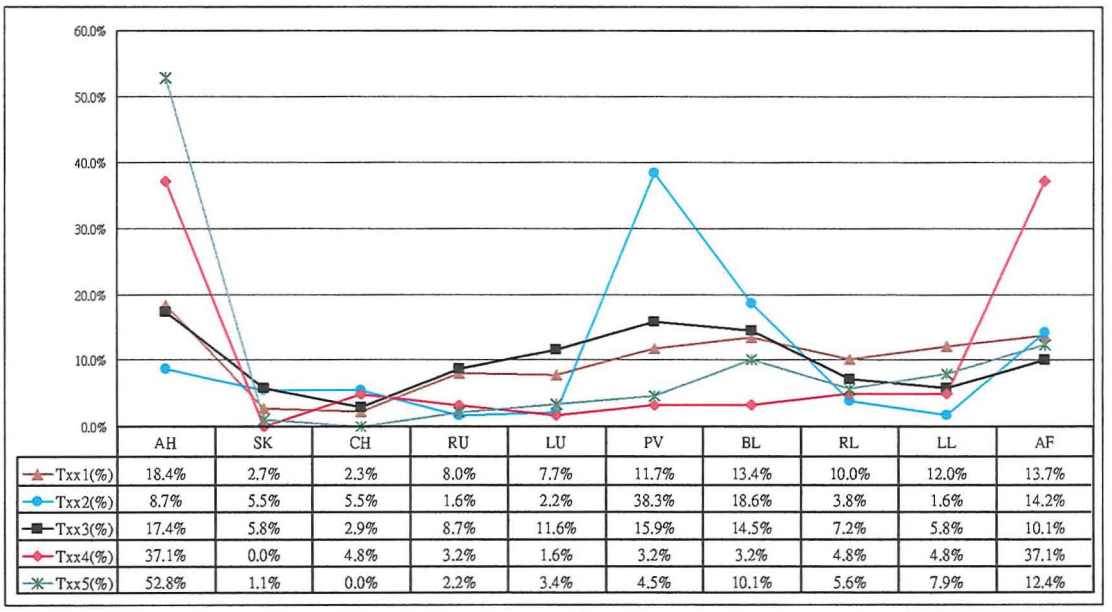
In sum, the null hypothesis is rejected and the distribution of five forms of trade ceramics and four forms of earthenwares across various body parts is significantly different. It supports, at least partly, Fox's recognition of possible patterns between pottery vessels and body parts (Fox 1959: 356-7).

TC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Txx0	3	2	3	1	1	0	0	0	1	3	1	0	1	2	0	0
Txx1	31	14	10	8	5	0	0	1	2	15	16	10	14	7	4	12
Txx2	10	3	3	2	0	0	0	0	0	1	4	3	1	2	1	2
Txx3	3	6	3	1	0	0	0	0	0	5	8	4	2	0	0	1
Txx4	15	6	2	1	0	0	0	0	1	1	0	0	1	1	0	2
Txx5	25	8	14	1	2	0	0	1	1	0	0	2	4	0	0	1
Txx9	1	1	4	1	0	0	0	0	0	2	0	0	0	0	0	0
Sum	88	40	39	15	8	0	0	2	5	27	29	19	23	12	5	18
	17	18	19	20	21	22	33	44	55	66	77	88	99	100	NA	Sum
Txx0	0	1	2	0	0	1	0	0	0	0	2	0	1	0	9	34
Txx1	14	1	4	5	4	32	3	14	6	17	34	1	7	8	49	348
Txx2	0	0	1	2	4	20	7	10	8	9	69	1	10	10	17	200
Txx3	1	0	1	1	1	5	0	0	1	9	11	0	2	4	12	81
Txx4	2	0	0	2	6	15	0	1	1	0	2	0	3	0	11	73
Txx5	3	2	0	2	0	9	1	1	2	5	2	2	0	1	12	101
Txx9	1	0	0	0	1	4	0	0	0	1	3	0	0	0	7	26
Sum	21	4	8	12	16	86	11	26	18	41	123	4	23	23	117	863

Table 5-21 Distribution of trade pottery vessels at 30 body positions across seven forms among common inhumations at seven Calatagan sites (Txx1: bowls; Txx2: plates; Txx3: saucers; Txx4: jars; Txx5: jarlets; Txx9: others).

	Around head (AH)	Head (SK)	Chest (CH)	Right upper limb (RU)	Left upper limb (LU)	Pelvis (PV)	Between legs (BL)	Right lower limb (RL)	Left lower limb (LL)	Around feet (AF)	Total
Txx1	55	8	7	24	23	35	40	30	36	41	299
Txx2	16	10	10	3	4	70	34	7	3	26	183
Txx3	12	4	2	6	8	11	10	5	4	7	69
Txx4	23	0	3	2	1	2	2	3	3	23	62
Txx5	47	1	0	2	3	4	9	5	7	11	89
Sum	153	23	22	37	39	122	95	50	53	108	702

Table 5-22 Distribution of five forms of trade ceramics across 10 body parts at seven Calatagan sites (Txx1: bowls; Txx2: plates; Txx3: saucers; Txx4: jars; Txx5: jarlets).



	AH	SK	CH	RU	LU	PV	BL	RL	LL	AF
Txx1(%)	18.4%	2.7%	2.3%	8.0%	7.7%	11.7%	13.4%	10.0%	12.0%	13.7%
Txx2(%)	8.7%	5.5%	5.5%	1.6%	2.2%	38.3%	18.6%	3.8%	1.6%	14.2%
Txx3(%)	17.4%	5.8%	2.9%	8.7%	11.6%	15.9%	14.5%	7.2%	5.8%	10.1%
Txx4(%)	37.1%	0.0%	4.8%	3.2%	1.6%	3.2%	3.2%	4.8%	4.8%	37.1%
Txx5(%)	52.8%	1.1%	0.0%	2.2%	3.4%	4.5%	10.1%	5.6%	7.9%	12.4%

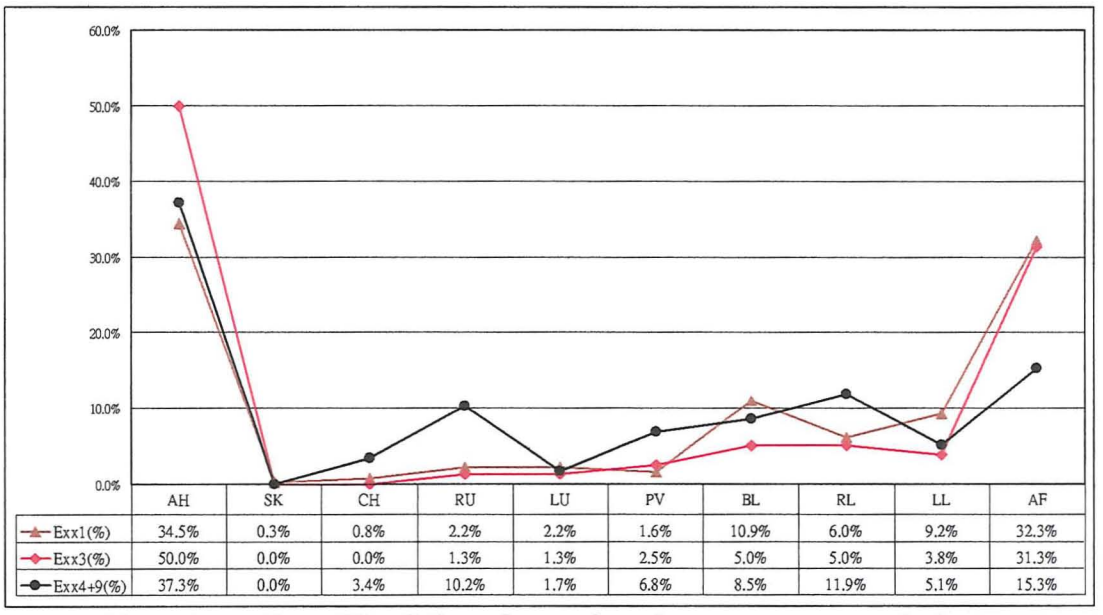
Figure 5-7 Proportions (%) of five forms of trade ceramics across ten body parts at seven Calatagan sites (AH: around head; SK: head; CH: chest; RU: right upper limb; LU: left upper limb; PV: pelvis; BL: between legs; RL: right lower limb; LL: left lower limb; AF: around feet. Txx1: bowls; Txx2: plates; Txx3: saucers; Txx4: jars; Txx5: jarlets).

EA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Exx0	39	14	13	4	6	2	1	3	1	1	0	4	3	1	0	2
Exx1	80	22	25	4	8	0	0	4	0	0	0	6	6	0	2	15
Exx3	22	9	9	1	1	0	0	0	0	0	0	1	0	0	0	3
Exx4	7	5	6	5	0	0	0	1	1	0	0	5	0	0	0	1
Exx9	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum	150	51	54	14	15	2	1	8	2	1	0	16	9	1	2	21
	17	18	19	20	21	22	33	44	55	66	77	88	99	100	NA	Sum
Exx0	8	0	1	4	10	33	4	5	3	2	2	3	2	0	39	210
Exx1	25	1	1	13	16	90	16	13	4	7	3	3	3	1	48	416
Exx3	1	0	2	2	2	21	0	1	1	2	1	1	0	0	15	95
Exx4	1	1	1	2	1	3	1	0	0	1	2	0	2	0	8	54
Exx9	1	0	0	0	0	3	1	2	0	0	2	0	0	0	0	13
Sum	36	2	5	21	29	150	22	21	8	12	10	7	7	1	110	788

Table 5-23 Distribution of earthenware vessels at 30 body positions across four forms among common inhumations at seven Calatagan sites (Exx0: form unknown; Exx1: normal Palayok-form; Exx3: Kinalabasa form; Exx4: Kendi-form; Exx9: other forms).

	Around head (AH)	Head (SK)	Chest (CH)	Right upper limb (RU)	Left upper limb (LU)	Pelvis (PV)	Between legs (BL)	Right lower limb (RL)	Left lower limb (LL)	Around feet (AF)	Total
Exx1	127	1	3	8	8	6	40	22	34	119	368
Exx3	40	0	0	1	1	2	4	4	3	25	80
Exx4+9	22	0	2	6	1	4	5	7	3	9	59
Sum	189	1	5	15	10	12	49	33	40	153	507

Table 5-24 Distribution of three forms of earthenware across 10 body parts at seven Calatagan sites (Exx1: normal Palayok-form; Exx3: Kinalabasa form; Exx4: Kendi-form; Exx9: other forms).



	AH	SK	CH	RU	LU	PV	BL	RL	LL	AF
Exx1(%)	34.5%	0.3%	0.8%	2.2%	2.2%	1.6%	10.9%	6.0%	9.2%	32.3%
Exx3(%)	50.0%	0.0%	0.0%	1.3%	1.3%	2.5%	5.0%	5.0%	3.8%	31.3%
Exx4+9(%)	37.3%	0.0%	3.4%	10.2%	1.7%	6.8%	8.5%	11.9%	5.1%	15.3%

Figure 5-8 Proportions (%) of three forms of earthenwares across ten body parts at seven Calatagan sites (AH: around head; SK: head; CH: chest; RU: right upper limb; LU: left upper limb; PV: pelvis; BL: between legs; RL: right lower limb; LL: left lower limb; AF: around feet. Exx1: normal Palayok-form; Exx3: Kinalabasa form; Exx4: Kendi-form; Exx9: other forms).

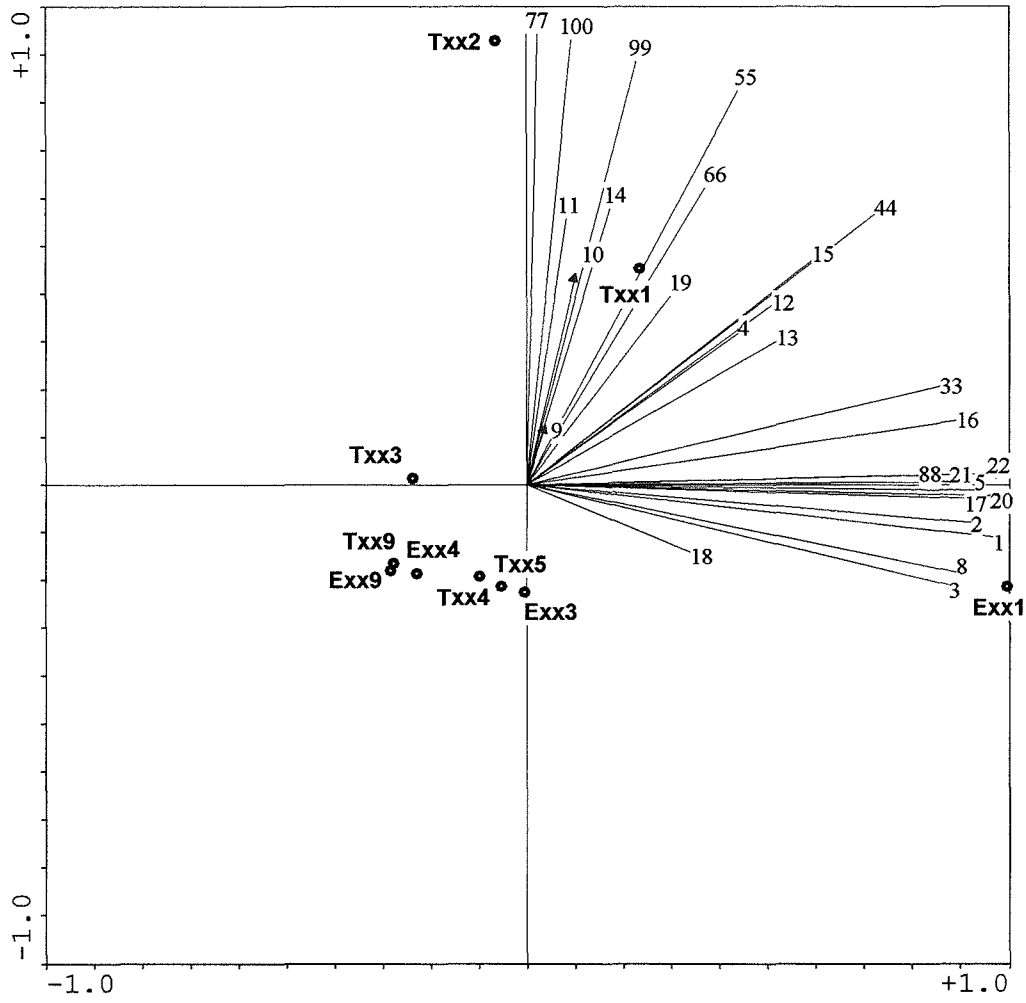


Figure 5-9 Post of the first two principal axes from a correspondence analysis of forms of pottery vessels (trade ceramics and earthenwares) and body positions (digits) among common inhumations at seven Calatagan sites (Txx1: bowls; Txx2: plates; Txx3: saucers; Txx4: jars; Txx5: jarlets; Exx1: normal Palayok-form; Exx3: Kinalabasa form; Exx4: Kendi-form; Exx9: other forms. Data based on Table 5-21 and Table 5-23, excludes unknown form and position; eigenvalue of axis 1 is 0.678, axis 2 is 0.260).

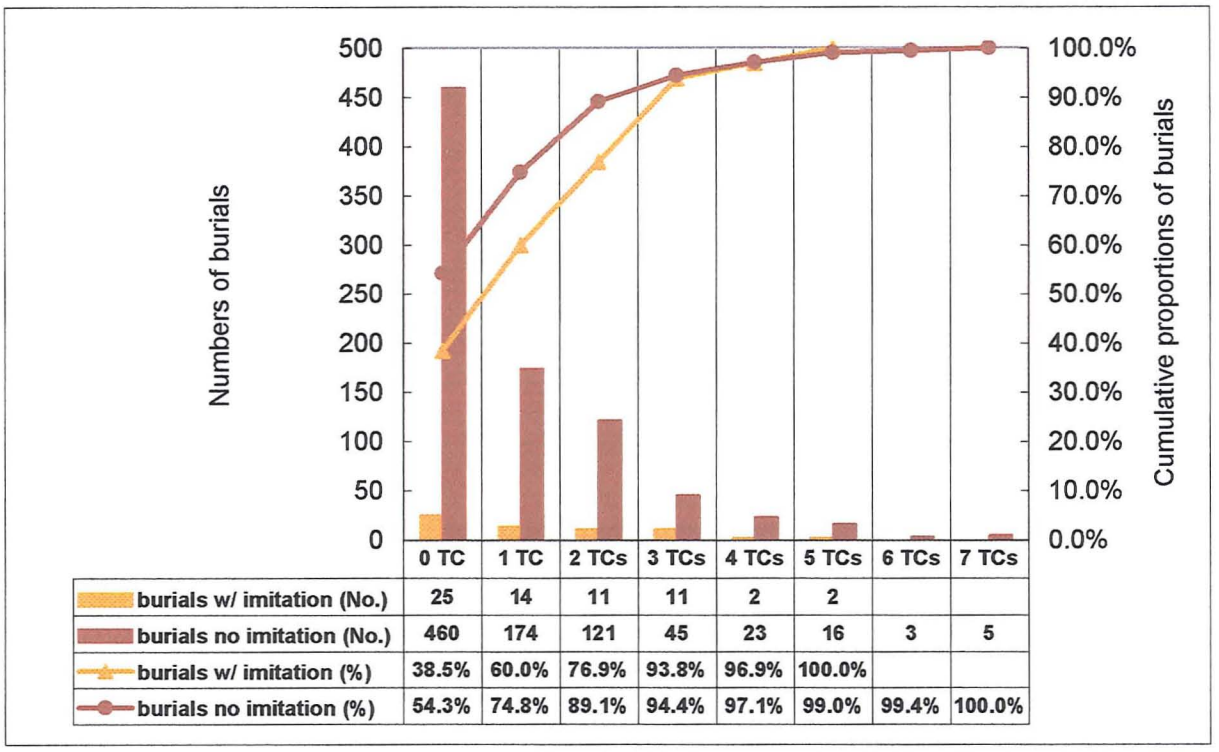
IMITATION

This section will investigate whether common inhumations containing earthenwares which imitated trade wares were related to the different quantities of trade ceramics. A chi-squared test reveals that the distribution of burials with and without imitation wares across differing quantities of trade ceramics is significantly different ($\chi^2=10.76>\chi^2_{1-0.05(1*2)}=5.99$, $\emptyset^2=0.012$. see Table 5-25). However, the strength of the relationship is not strong ($\emptyset^2=0.012$). For burials with imitation wares (see Figure 5-10), less than 40 per cent of burials did not contain trade ceramics; the same percentage of burials had one or two trade ceramics, and more than 20 per cent of burials had three or more trade ceramics, but there were no burials with six or seven trade ceramics. On the other hand, nearly 55 per cent of common inhumations without imitation wares contained no trade ceramics, while 34.1 per cent had one or two trade ceramics, and only ten per cent of burials without imitation wares had three or more trade ceramics.

In the preceding section, correspondence analysis (CA) clearly indicates that there is a close relationship between certain forms of pottery vessels and specific body positions (see Figure 5-9). For the hypothesised relationship of imitation, the CA demonstrates that those imitation wares (Exx4 and Exx9) were bound together, and also with many other uncommon wares like jars (Txx4), jarlets (Txx5), and saucers (Txx3), as well as Kinalabasa-form earthenwares (Exx3). On the other hand, those imitation wares were undoubtedly distinct from the most common Palayok-form earthenwares (Exx1), in terms of the X-axis, and separated from the most common bowls (Txx1), plates (Txx2), in regard to the Y-axis.

To sum up, the statistical results clearly suggest that the null hypothesis is rejected: the distribution of common inhumations with and without imitation wares

across the differing quantities of trade ceramics is significantly different. Though the strength of the relationship is not very strong, the results indicate that burials with trade ceramics tend to have imitation wares. Finally, the spatial pattern across various body parts illustrates that imitation wares were used similar to other uncommon trade wares, separated from most common Trade ceramics and earthenwares.



	0 TC	1 TC	2 TCs	3 TCs	4 TCs	5 TCs	6 TCs	7 TCs
burials w/ imitation (No.)	25	14	11	11	2	2		
burials no imitation (No.)	460	174	121	45	23	16	3	5
burials w/ imitation (%)	38.5%	60.0%	76.9%	93.8%	96.9%	100.0%		
burials no imitation (%)	54.3%	74.8%	89.1%	94.4%	97.1%	99.0%	99.4%	100.0%

Figure 5-10 Numbers (No.) and cumulative proportions (%) of common inhumations with imitation earthenware, showing differing quantities of trade ceramics (TC), at seven Calatagan sites.

	Burials with imitation earthenwares	Burials without imitation earthenwares	Sum
3-7 trade ceramics	15 (7.6)	92 (99.4)	107
1-2 trade ceramics	25 (22.8)	295 (297.2)	320
No trade ceramics	25 (34.6)	460 (450.4)	485
Sum	65	847	912

Table 5-25 Observed and expected numbers of common inhumations with/without imitation earthenwares across differing quantities of trade ceramics at Calatagan sites ($\chi^2=10.76>\chi^2_{1-0.05(1*2)}=5.99$. $\emptyset^2=0.012$. Number in parentheses is expected count).

Part 2: Analysis of more social variables

In the preceding five sections, all the hypothesised relationships were conducted on common inhumations and were treated as a coherent entity without internal variation. In order to extract more information, more variables are analysed, including age, tooth-filing, orientations, and sites. The following sections will examine different burial treatments in regard to these variables within common inhumations, as well as compared with uncommon headless burials, aimed at answering the following questions: whether there existed differences between various age groups. Did the practice of body decoration (presence/absence of tooth-filing) relate to the mortuary practice? Did certain orientations relate to different quantities of pottery vessels? Was there variation among the seven cemeteries? And, finally, whether there existed differences between common inhumation and uncommon burial. Due to the small sample size, the following analysis will only examine the hypothesised relationships of quantity. That is, the general null hypothesis sets up the distribution of different conditions of certain social variable across the differing frequencies of pottery vessels as not different.

AGE

In regard to the different age groups (Table 5-26 and Table 5-28), because of the sample size, there are only the adult, the juvenile and the child groups available for chi-squared test. The null hypothesis is that the distribution of three age groups of common inhumations across three differing frequencies of pottery vessels is not different. The results of chi-squared tests reveal that the null hypothesis is accepted for both trade ceramics (Table 5-27) and earthenwares (Table 5-29). That is, the difference between the adult, the juvenile, and the child groups with respect to burials without pottery vessels, with one or two items, and with three or more items is not significant.

The results thus suggest that the late protohistoric Calatagan people had a consistent attitude toward adults and younger people in their mortuary practices, in terms of different numbers of pottery vessels. In studying the development of social complexity, the appearance of grave goods in young burials is often seen as an indicator of hereditary social ranking (Binford 1972; O'Shea 1984: 42). Whether this could indicate Calatagan was a rank society or not is still open to debate, although the results suggest that the difference of ages is unrelated to the quantity of pottery vessels.

	Adult	Juvenile	Child	Infant	Unknown	Sum
0 TC	289 (51.0%)	64 (54.7%)	86 (57.0%)	6 (46.2%)	40	485 (53.2%)
1 TC	121 (21.3%)	27 (23.1%)	22 (14.6%)	5 (38.5%)	13	188 (20.6%)
2 TC	83 (14.6%)	15 (12.8%)	25 (16.6%)	2 (15.4%)	7	132 (14.5%)
3 TC	37 (6.5%)	5 (4.3%)	12 (7.9%)	0	2	56 (6.1%)
4 TC	19 (3.4%)	2 (1.7%)	3 (2.0%)	0	1	25 (2.7%)
5 TC	12 (2.1%)	3 (2.6%)	3 (2.0%)	0	0	18 (2.0%)
6 TC	1 (0.2%)	1 (0.9%)	0	0	1	3 (0.3%)
7 TC	5 (0.9%)	0	0	0	0	5 (0.5%)
sum	567 (100%)	117 (100%)	151 (100%)	13 (100%)	64	912 (100%)

Table 5-26 Distribution of common inhumations showing quantities of trade ceramic across age groups at seven Calatagan sites (percentage exclude unknown data).

	Adult	**Juvenile**	**Child**	**Sum**
Burials without TC	**289 (298.1)**	**64 (61.5)**	**86 (79.4)**	**439**
Burials with 1-2 TCs	**204 (199.0)**	**42 (41.1)**	**47 (53.0)**	**293**
Burials with 3-7 TCs	**74 (69.9)**	**11 (14.4)**	**18 (18.6)**	**103**
Sum	**567**	**117**	**151**	**835**

Table 5-27 Observed and expected numbers of common inhumations with differing frequencies of trade ceramics across three age groups at seven Calatagan sites ($\chi^2=2.83<\chi^2_{1-0.05(2*2)}=9.49$. Number in parentheses is expected count).

	Adult	Juvenile	Child	Infant	Unknown	Sum
0 EA	230 (40.6%)	45 (38.5%)	78 (51.7%)	5 (38.5%)	39	397 (43.5%)
1 EA	181 (31.9%)	37 (31.6%)	41 (27.2%)	4 (30.8%)	19	282 (30.9%)
2 EA	135 (23.8%)	30 (25.6%)	28 (18.5%)	3 (23.1%)	4	200 (21.9%)
3 EA	16 (2.8%)	5 (4.3%)	4 (2.6%)	1 (7.7%)	2	28 (3.1%)
4 EA	3 (0.5%)	0	0	0	0	3 (0.3%)
5 EA	2 (0.4%)	0	0	0	0	2 (0.2%)
sum	567 (100%)	117 (100%)	151 (100%)	13 (100%)	64	912 (100%)

Table 5-28 Distribution of common inhumations showing quantities of earthenwares across age groups at seven Calatagan sites (percentage exclude unknown data).

	Adult	**Juvenile**	**Child**	**Sum**
Burials without EA	**230 (239.7)**	**45 (49.5)**	**78 (63.8)**	**353**
Burials with 1-2 EAs	**316 (306.9)**	**67 (63.3)**	**69 (81.7)**	**452**
Burials with 3-5 EAs	**21 (20.4)**	**5 (4.2)**	**4 (5.4)**	**30**
Sum	**567**	**117**	**151**	**835**

Table 5-29 Observed and expected numbers of common inhumations with differing frequencies of earthenwares across three age groups at seven Calatagan sites ($\chi^2=6.95<\chi^2_{1-0.05(2*2)}=9.49$. Number in parentheses is expected count).

TOOTH-FILING

Regarding tooth-filing condition, it is only applicable to the adult common inhumation (Table 5-30 and Table 5-32). The null hypothesis states that the distribution of tooth-filing and no-tooth-filing adult common inhumations across the differing quantities of pottery vessels is not different. The results of chi-squared tests shows that the null hypothesis is accepted, both for trade ceramics (Table 5-31) and for earthenwares (Table 5-33).

Although tooth-filing was widely practiced among adults, regardless of sex or status, throughout the pre-Hispanic Philippine archipelago (Scott, W. 1994), that because a professional dental worker was paid for his service, a client must have had the financial ability to afford it. However, these chi-squared results reveal that whether the individual was with or without tooth-filing, is no different from the different quantities of pottery vessels. It suggests that the quantity of grave goods, either imported or local wares, with the individual is unrelated to his/her ability to afford tooth-filing, a form of popular body decoration applied during a life time.

	Tooth-filed adult	No-tooth-filed adult
0 TC	110 (55.6%)	32 (48.5%)
1 TC	38 (19.2%)	19 (28.8%)
2 TC	26 (13.1%)	10 (15.2%)
3 TC	12 (6.1%)	2 (3.0%)
4 TC	4 (2.0%)	2 (3.0%)
5 TC	4 (2.0%)	1 (1.5%)
6 TC	0	0
7 TC	4 (2.0%)	0
Sum	198 (100%)	66 (100%)

Table 5-30 Distribution of tooth-filed and no-tooth-filed adult common inhumations across differing quantities of trade ceramics at seven Calatagan sites.

	Tooth-filed adult	**No-tooth-filed adult**	**Sum**
Burials without TC	**110** **(106.5)**	**32** **(35.5)**	**142**
Burials with 1-2 TCs	**64** **(69.8)**	**29** **(23.2)**	**93**
Burials with 3-7 TCs	**24** **(21.7)**	**5** **(7.3)**	**29**
Sum	**198**	**66**	**264**

Table 5-31 Observed and expected numbers of burials with differing frequencies of trade ceramics across tooth-filed and no-tooth-filed adult common inhumations at seven Calatagan sites ($\chi^2=3.29<\chi^2_{1-0.05(1*2)}=5.99$. Number in parentheses is expected count).

	Tooth-filed adult	No-tooth-filed adult
0 EA	68 (34.3%)	26 (39.4%)
1 EA	64 (32.3%)	23 (34.8%)
2 EA	56 (28.3%)	16 (24.2%)
3 EA	8 (4.0%)	1 (1.5%)
4 EA	1 (0.5%)	0
5 EA	1 (0.5%)	0
Sum	198 (100%)	66 (100%)

Table 5-32 Distribution of tooth-filed and no-tooth-filed adult common inhumations across differing quantities of earthenwares at seven Calatagan sites.

	Tooth-filed adult	**No-tooth-filed adult**	**Sum**
Burials without EA	**68** **(70.5)**	**26** **(23.5)**	**94**
Burials with 1-2 EAs	**120** **(119.2)**	**39** **(39.8)**	**159**
Burials with 3-5 EAs	**10** **(8.3)**	**1** **(2.7)**	**11**
Sum	**198**	**66**	**264**

Table 5-33 Observed and expected numbers of burials with differing frequencies of earthenwares across tooth-filed and no-tooth-filed adult common inhumations at seven Calatagan sites ($\chi^2=1.86<\chi^2_{1-0.05(1*2)}=5.99$. Number in parentheses is expected count).

ORIENTATION

In regard to examining orientation, it is necessary to reiterate that the common inhumations among eight orientations is very unevenly distributed (Table 5-34and Table 5-37), and seem to divide into two groups: the five major, non-west orientations – north, northeast, east, southeast, and south – have most (more than 85%) burials; the other three west orientations – southwest, west, and northwest – have fewer than seven per cent of common inhumations. Thus, because of the limit of sample size, the chi-squared test cannot apply to all orientations, and the sample orientations will be different between trade ceramics and earthenwares (see below).

The null hypothesis sets up as the distribution of common inhumations with differing frequencies of pottery vessels across different orientations is not different. The chi-squared results reveal that the null hypothesis is accepted: the difference among common inhumations with three differing frequencies of trade ceramics with respect to seven orientations is not significant (Table 5-35); as are earthenwares against six orientations (Table 5-38).

Although the distribution among orientations is not significantly different, it is still worth investigating whether such contrasts exist between west and non-west orientations, since their quantities are clearly different. Further chi-squared tests reveal that the distribution of west and non-west burials across the three differing frequencies of trade ceramics (Table 5-36), as well as earthenwares (Table 5-39), is not different. Thus, it is difficult to say whether the west orientated burials were really "profane" since they were still offered grave goods, and since there was no significant difference between them and other non-west orientated burials in terms of their quantities of trade ceramics and earthenwares.

	N	NE	E	SE	S	SW	W	NW	Unknown	Sum
0 TC	104 (52.0%)	74 (52.9%)	93 (54.7%)	66 (53.2%)	75 (50.0%)	18 (51.4%)	4 (80.0%)	15 (71.4%)	36	485 (53.2%)
1 TC	41 (20.5%)	29 (20.7%)	36 (21.2%)	30 (24.2%)	26 (17.3%)	9 (25.7%)	0	2 (9.5%)	15	188 (20.6%)
2 TC	34 (17.0%)	19 (13.6%)	22 (12.9%)	14 (11.3%)	26 (17.3%)	5 (14.3%)	1 (20.0%)	2 (9.5%)	9	132 (14.5%)
3 TC	13 (6.5%)	8 (5.7%)	9 (5.3%)	9 (7.3%)	11 (7.3%)	1 (2.9%)	0	2 (9.5%)	3	56 (6.1%)
4 TC	3 (1.5%)	9 (6.4%)	2 (1.2%)	2 (1.6%)	6 (4.0%)	1 (2.9%)	0	0	2	25 (2.7%)
5 TC	4 (2.0%)	1 (0.7%)	5 (2.9%)	3 (2.4%)	3 (2.0%)	1 (2.9%)	0	0	1	18 (2.0%)
6 TC	1 0.5%)	0	1 (0.6%)	0	1 (0.7%)	0	0	0	0	3 (0.3%)
7 TC	0	0	2 (1.2%)	0	2 (1.3%)	0	0	0	1	5 (0.5%)
Sum	200 (100%)	140 (100%)	170 (100%)	124 (100%)	150 (100%)	35 (100%)	5 (100%)	21 (100%)	67	912 (100%)

Table 5-34 Distribution of common inhumations showing quantities of trade ceramics across orientations at seven sites in Calatagan.

	N	NE	E	SE	S	SW	NW	Sum
Burials without TC	**104 (106.0)**	**74 (74.2)**	**93 (90.1)**	**66 (65.7)**	**75 (79.5)**	**18 (18.5)**	**15 (11.1)**	**445**
Burials with 1-2 TCs	**75 (70.2)**	**48 (49.2)**	**58 (59.7)**	**44 (43.5)**	**52 (52.7)**	**14 (12.3)**	**4 (7.4)**	**295**
Burials with 3-7 TCs	**21 (23.8)**	**18 (16.7)**	**19 (20.2)**	**14 (14.8)**	**23 (17.9)**	**3 (4.2)**	**2 (2.5)**	**100**
Sum	**200**	**140**	**170**	**124**	**150**	**35**	**21**	**840**

Table 5-35 Observed and expected numbers of burials with differing frequencies of trade ceramics across seven orientations at seven Calatagan sites (χ^2=6.41<$\chi^2_{1-0.05(6*2)}$=21.03; $\emptyset^2$=0.008. N.B.: west-oriented burials are excluded from the chi-squared test here. Number in parentheses is expected count)

	Non-west orientated burials (N, NE, E, SE, S)	West orientated burials (SW, W, NW)	Sum
Burials without TC	**412 (416.6)**	**37 (32.4)**	**449**
Burials with 1-2 TCs	**277 (274.6)**	**19 (21.4)**	**296**
Burials with 3-7 TCs	**95 (92.8)**	**5 (7.2)**	**100**
Sum	**784**	**61**	**845**

Table 5-36 Observed and expected numbers of common inhumations with differing frequencies of trade ceramics across non-west orientation and west orientation at seven Calatagan sites (χ^2=1.71<$\chi^2_{1-0.05(1*2)}$=5.99; $\emptyset^2$=0.002. Number in parentheses is expected count)

	N	NE	E	SE	S	SW	W	NW	Unknown	Sum
0 EA	98 (49.0%)	65 (46.4%)	68 (40.0%)	46 (37.1%)	54 (36.0%)	18 (51.4%)	2 (40.0%)	9 (42.9%)	37	397 (43.5%)
1 EA	55 (27.5%)	39 (27.9%)	57 (33.5%)	46 (37.1%)	53 (35.3%)	11 (31.4%)	3 (60.0%)	3 (14.3%)	15	282 (30.9%)
2 EA	41 (20.5%)	29 (20.7%)	40 (23.5%)	26 (21.0%)	39 (26.0%)	6 (17.1%)	0	8 (38.1%)	11	200 (21.9%)
3 EA	3 (1.5%)	7 (5.0%)	4 (2.4%)	6 (4.8%)	3 (2.0%)	0	0	1 (4.8%)	4	28 (3.1%)
4 EA	2 (1.0%)	0	1 (0.6%)	0	0	0	0	0	0	3 (0.3%)
5 EA	1 (0.5%)	0	0	0	1 (0.7%)	0	0	0	0	2 (0.2%)
Sum	200 (100%)	140 (100%)	170 (100%)	124 (100%)	150 (100%)	35 (100%)	5 (100%)	21 (100%)	67	912 (100%)

Table 5-37 Distribution of common inhumations showing quantities of earthenwares across orientations at seven Calatagan sites.

	N	NE	E	SE	S	SW	Sum
Burials without EA	**98 (85.2)**	**65 (59.7)**	**68 (72.4)**	**46 (52.8)**	**54 (63.9)**	**18 (14.9)**	**349**
Burials with 1-2 EAs	**96 (107.9)**	**68 (75.6)**	**97 (91.7)**	**72 (66.9)**	**92 (81.0)**	**17 (18.9)**	**442**
Burials with 3-5 EAs	**6 (6.8)**	**7 (4.8)**	**5 (5.8)**	**6 (4.2)**	**4 (5.1)**	**0 (1.2)**	**28**
Sum	**200**	**140**	**170**	**124**	**150**	**35**	**819**

Table 5-38 Observed and expected numbers of burials with differing frequencies of earthenwares across six orientations at seven Calatagan sites (χ^2=13.60<$\chi^2_{1\text{-}0.05(5*2)}$=18.31; $\emptyset^2$=0.017. N.B.: west and northwest oriented burials are excluded from the chi-squared test here. Number in parentheses is expected count).

	Non-west orientated burials (N, NE, E, SE, S)	**West orientated burials (SW, W, NW)**	**Sum**
Burials without EA	**331 (334)**	**29 (26)**	**360**
Burials with 1-2 EAs	**425 (423.1)**	**31 (32.9)**	**456**
Burials with 3-5 EAs	**28 (26.9)**	**1 (2.1)**	**29**
Sum	**784**	**61**	**845**

Table 5-39 Observed and expected numbers of common inhumations with differing frequencies of earthenwares across non-west orientation and west orientation at seven Calatagan sites (χ^2=1.12<$\chi^2_{1\text{-}0.05(1*2)}$=5.99; $\emptyset^2$=0.001. Number in parentheses is expected count)

SITE

In regard to the common inhumations among the seven sites, the null hypothesis states that the distribution of common inhumations across the differing frequencies of trade ceramics is not different. The result of the chi-squared test rejects the null hypothesis, and demonstrates a significant difference in quantities of trade ceramics in common inhumations among the seven sites (Table 5-40 and Table 5-41). On the other hand, although the chi-squared test is not always suitable for the earthenwares because too many cells have too small a sample size (Table 5-47 and Table 5-48), it can still recognize similar patterns for earthenwares (see discussion below).

More than just the differences between the seven sites, further examination suggests a clear contrast between two groups of sites. By looking into the differences between observed and expected numbers of burials with differing frequencies of trade ceramics (Table 5-41), it reveals that three sites (Kay Tomas, KT; Pulong Bakaw, PB; and Talisay, T) have similar distributions which are distinct from the other four sites (Karitunan; KR; Palapat, PP; Punta Sunog, PS; and Santa Ana, SA). That is, common inhumations with three or more trade ceramics are greater in number than expected. Conversely, burials without trade ceramics are fewer than expected. Correspondingly, these three sites are larger sites in terms of burial sample size. In order to confirm if this is the case, three further chi-squared texts were carried out. The results show that the distribution of common inhumations is not significantly different among these three large sites (KT, PB, and T) across differing frequencies of trade ceramics (Table 5-42), as the other four small sites (KR, PP, PS, and SA; Table 5-43). However, the distribution between three large sites and four small sites across differing frequencies of trade ceramics is significantly different (Table 5-44). Moreover, it is worth noting that

such difference is only between burials with and without trade ceramics (Table 5-45), not between burials with less (1 and 2 items) and more (3 and more items) trade ceramics (Table 5-46).

Similar patterns could also be observed for the distribution of burials containing earthenwares. As with trade ceramics, by checking the difference between observed and expected numbers of burials with differing frequencies of earthenwares (Table 5-47), it reveals that Kay Tomas and Pulong Bakaw have the same distributions but which are distinct from the four small sites, although Talisay shows a dissimilar pattern. Even excluding Talisay, the chi-squared text results still show that it is not significantly different for the distribution of common inhumations between Kay Tomas and Pulong Bakaw across differing frequencies of earthenwares (Table 5-49), or the other four small sites (KR, PP, PS, and SA; see Table 5-50). On the other hand, especially compared to the distribution of trade ceramics, there exists clear contrast between two large sites and four small sites burials with and without earthenwares (Table 5-51, cf. Table 5-45), as well as between burials with less and more earthenwares (Table 5-51, cf. Table 5-46). It is also worth noticing that the Yule's Q values, which represent the strength of relationship, for those earthenwares tests are bigger than for trade ceramics.

In short, the null hypothesis is rejected and the distribution of pottery vessels across seven sites is different, or more precisely the difference between large sites and small sites is significant. The test results also reveal that the bigger sites tend to have more burials containing trade ceramics and earthenwares, although the strength of association is different between trade ceramics and earthenwares. Whether it indicates that large sites had more people who had access to trade ceramics is still open to debate.

	KT	PB	KR	PP	PS	SA	T	Sum
0 TC	107 (45.9%)	69 (47.3%)	58 (54.2%)	73 (63.5%)	80 (65.6%)	31 (55.4%)	67 (50.4%)	485 (53.2%)
1 TC	55 (23.6%)	37 (25.3%)	20 (18.7%)	24 (20.9%)	18 (14.8%)	10 (17.9%)	24 (18.0%)	188 (20.6%)
2 TC	39 (16.7%)	19 (13.0%)	17 (15.9%)	12 (10.4%)	12 (8.9%)	9 (16.1%)	24 (18.0%)	132 (14.5%)
3 TC	21 (9.0%)	9 (6.2%)	6 (5.6%)	3 (2.6%)	4 (3.3%)	3 (5.4%)	10 (7.5%)	56 (6.1%)
4 TC	4 (1.7%)	6 (4.1%)	4 (3.7%)	2 (1.7%)	3 (2.5%)	2 (3.6%)	4 (3.0%)	25 (2.7%)
5 TC	4 (1.7%)	4 (2.7%)	2 (1.9%)	1 (0.9%)	4 (3.3%)	1 (1.8%)	2 (1.5%)	18 (2.0%)
6 TC	2 (0.9%)	0	0	0	0	0	1 (0.8%)	3 (0.3%)
7 TC	1 (0.4%)	2 (1.4%)	0	0	1 (0.8%)	0	1 (0.8%)	5 (0.5%)
Sum	233 (100%)	146 (100%)	107 (100%)	115 (100%)	122 (100%)	56 (100%)	133 (100%)	912 (100%)

Table 5-40 Distribution of common inhumations showing quantities of trade ceramics across seven sites in Calatagan.

	KT	PB	KR	PP	PS	SA	T	Sum
Burials without TC	**107 (123.9)**	**69 (77.6)**	**58 (56.9)**	**73 (61.2)**	**80 (64.9)**	**31 (29.8)**	**67 (70.7)**	**485**
Burials with 1-2 TCs	**94 (81.8)**	**56 (51.2)**	**37 (37.5)**	**36 (40.4)**	**30 (42.8)**	**19 (19.6)**	**48 (46.7)**	**320**
Burials with 3-7 TCs	**32 (27.3)**	**21 (17.1)**	**12 (12.6)**	**6 (13.5)**	**12 (14.3)**	**6 (6.6)**	**18 (15.6)**	**107**
Sum	**233**	**146**	**107**	**115**	**122**	**56**	**133**	**912**

Table 5-41 Observed and expected numbers of burials with differing frequencies of trade ceramics across seven sites at seven Calatagan sites (χ^2=22.65>$\chi^2_{1\text{-}0.05(6*2)}$=21.03; $\emptyset^2$=0.025. Number in parentheses is expected count).

	KT	PB	T	Sum
Burials without TC	**107 (110.6)**	**69 (69.3)**	**67 (63.1)**	**243**
Burials with 1-2 TCs	**94 (90.1)**	**56 (56.5)**	**48 (51.4)**	**198**
Burials with 3-7 TCs	**32 (32.3)**	**21 (20.2)**	**18 (18.4)**	**71**
Sum	**233**	**146**	**133**	**512**

Table 5-42 Observed and expected numbers of burials with differing frequencies of trade ceramics across three large sites in Calatagan (χ^2=0.78<$\chi^2_{1\text{-}0.05(2*2)}$=9.48; $\emptyset^2$=0.002. Number in parentheses is expected count).

	KR	PP	PS	SA	Sum
Burials without TC	**58 (64.7)**	**73 (69.6)**	**80 (73.8)**	**31 (33.9)**	**242**
Burials with 1-2 TCs	**37 (32.6)**	**36 (35.1)**	**30 (37.2)**	**19 (17.1)**	**122**
Burials with 3-7 TCs	**12 (9.6)**	**6 (10.4)**	**12 (11)**	**6 (5)**	**36**
Sum	**107**	**115**	**122**	**56**	**400**

Table 5-43 Observed and expected numbers of burials with differing frequencies of trade ceramics across four small sites in Calatagan (χ^2=6.54<$\chi^2_{1\text{-}0.05(3*2)}$=12.59; $\emptyset^2$=0.020. Number in parentheses is expected count).

	Four small sites (KR, PP, PS, SA)	Three large sites (KT, PB, T)	Sum
Burials without TC	**242 (212.7)**	**243 (272.3)**	**485**
Burials with 1-2 TCs	**122 (140.5)**	**198 (179.6)**	**320**
Burials with 3-7 TCs	**36 (46.9)**	**71 (60.1)**	**107**
Sum	**400**	**512**	**912**

Table 5-44 Observed and expected numbers of burials with differing frequencies of trade ceramics across three large sites and four small sites in Calatagan (χ^2=16.56>$\chi^2_{1-0.05(1*2)}$=9.48; $\emptyset^2$=0.018. Number in parentheses is expected count).

	Four small sites (KR, PP, PS, SA)	Three large sites (KT, PB, T)	Sum
Burials without TC	**242 (212.7)**	**243 (272.3)**	**485**
Burials with TCs	**158 (187.3)**	**269 (239.7)**	**427**
Sum	**400**	**512**	**912**

Table 5-45 Observed and expected numbers of burials with/without trade ceramics across three large sites and four small sites in Calatagan (χ^2=15.33>$\chi^2_{1-0.05(1*1)}$=3.84; $\emptyset^2$=0.017. Q=0.26. Number in parentheses is expected count).

	Four small sites (KR, PP, PS, SA)	Three large sites (KT, PB, T)	Sum
Burials with less TCs (1 or 2 items)	**122 (118.4)**	**198 (201.6)**	**320**
Burials with more TCs (3 or more items)	**36 (39.6)**	**71 (67.4)**	**107**
Sum	**158**	**269**	**427**

Table 5-46 Observed and expected numbers of burials with/without trade ceramics across three large sites and four small sites in Calatagan (χ^2=0.69<$\chi^2_{1-0.05(1*1)}$=3.84; $\emptyset^2$=0.001. Q=0.10. Number in parentheses is expected count).

	KT	PB	KR	PP	PS	SA	T	Sum
0 EA	67 (28.8%)	54 (37.0%)	64 (59.8%)	64 (55.7%)	58 (47.5%)	28 (50.0%)	62 (46.6%)	397 (43.5%)
1 EA	85 (36.5%)	47 (32.2%)	33 (30.8%)	33 (28.7%)	31 (25.4%)	12 (21.4%)	41 (30.8%)	282 (30.9%)
2 EA	68 (29.2%)	35 (24.0%)	9 (8.4%)	18 (15.7%)	31 (25.4%)	15 (26.8%)	24 (18.0%)	200 (21.9%)
3 EA	11 (4.7%)	10 (6.8%)	1 (0.9%)	0	2 (1.6%)	1 (1.8%)	3 (2.3%)	28 (3.1%)
4 EA	1 (0.4%)	0	0	0	0	0	2 (1.5%)	3 (0.3%)
5 EA	1 (0.4%)	0	0	0	0	0	1 (0.8%)	2 (0.2%)
Sum	233 (100%)	146 (100%)	107 (100%)	115 (100%)	122 (100%)	56 (100%)	133 (100%)	912 (100%)

Table 5-47 Distribution of common inhumations showing quantities of earthenwares across seven sites in Calatagan.

	KT	PB	KR	PP	PS	SA	T	Sum
Burials without EA	**67 (101.4)**	**54 (63.6)**	**64 (46.6)**	**64 (50.1)**	**58 (53.1)**	**28 (24.4)**	**62 (57.9)**	**397**
Burials with 1-2 EAs	**153 (123.1)**	**82 (77.2)**	**42 (56.6)**	**51 (60.8)**	**62 (64.5)**	**27 (29.6)**	**65 (70.3)**	**482**
Burials with 3-5 EAs	**13 (8.4)**	**10 (5.3)**	**1 (3.9)**	**0 (4.2)**	**2 (4.4)**	**1 (2.0)**	**6 (4.8)**	**33**
Sum	**233**	**146**	**107**	**115**	**122**	**56**	**133**	**912**

Table 5-48 Observed numbers of burials with differing frequencies of earthenwares across seven sites at seven Calatagan sites (Number in parentheses is expected count, although chi-squared is un-applicable).

	KT	PB	Sum
Burials without EA	67 (74.4)	54 (46.6)	121
Burials with 1-2 EAs	153 (144.5)	82 (90.5)	235
Burials with 3-5 EAs	13 (14.1)	10 (8.9)	23
Sum	233	146	379

Table 5-49 Observed and expected numbers of burials with differing frequencies of earthenwares between two large sites in Calatagan (χ^2=3.45<$\chi^2_{1-0.05(1*2)}$=5.99; $\emptyset^2$=0.009. Number in parentheses is expected count).

	KR	PP	PS	SA	Sum
Burials without EA	64 (57.2)	64 (61.5)	58 (65.3)	28 (30.0)	214
Burials with EA	43 (49.8)	51 (53.5)	64 (56.7)	28 (26.0)	186
Sum	107	115	122	56	400

Table 5-50 Observed and expected numbers of burials with differing frequencies of earthenwares across four small sites in Calatagan (χ^2=3.95<$\chi^2_{1-0.05(3*1)}$=7.81; $\emptyset^2$=0.010. Number in parentheses is expected count).

	Four small sites (KR, PP, PS, SA)	Two large sites (KT, PB)	Sum
Burials without EA	214 (172)	121 (163)	335
Burials with EA	186 (228)	258 (216)	444
Sum	400	379	779

Table 5-51 Observed and expected numbers of burials with/without earthenwares between two large sites and four small sites in Calatagan (χ^2=36.95>$\chi^2_{1-0.05(1*1)}$=3.84; $\emptyset^2$=0.047. Q=0.42. Number in parentheses is expected count).

	Four small sites (KR, PP, PS, SA)	Two large sites (KT, PB)	Sum
Burials with less EAs (1 or 2 items)	182 (174.7)	235 (242.3)	417
Burials with more EAs (3 or more items)	4 (11.3)	23 (15.7)	27
Sum	186	258	444

Table 5-52 Observed and expected numbers of burials with less or more earthenwares between two large sites and four small sites in Calatagan (χ^2=8.66>$\chi^2_{1-0.05(1*1)}$=3.84; $\emptyset^2$=0.020. Q=0.63. Number in parentheses is expected count).

UNCOMMON BURIALS (SUPINE HEADLESS)

Up to now all the analyses have been of common inhumations which comprise more than 80% of all burials from the seven Calatagan sites. For the other 21 types of burials, most of them are too few to carry out any quantitative analysis. The exception is the single supine headless inhumations for which there were 50 burials with 52 trade ceramics and 25 earthenwares. They were buried in seven orientations except the northwest direction, and it is the only type of uncommon burial encountered at any of the Calatagan sites. Most were adults (39 out 50), with a few juvenile cases and no children. Almost all the headless burials, except for the few "head missing" cases in Kay Tomas, were the result of "head-hunting" behaviour, as indicated by damage to the vertebrae of the neck.

In comparing headless burials with common inhumations, the general pattern (see Table 5-53 and Table 5-54; cf. Table 5-1 and Table 5-2) reveals that nearly 38 per cent of the headless burials had no pottery vessels, more than the cases of the common inhumations (31.3%). Also fewer headless burials (26%, compared to 34.5% in common inhumations) contained both trade ceramics and earthenwares. But for those headless burials with pottery vessels, they were more likely to have trade ceramics than common inhumations: more than half (54%, 27 out of 50) of the headless burials contained trade ceramics, compared to 46.8 per cent (427 out of 912) of the common inhumations. Conversely, only one third (34%, 17 out of 50) of the headless burials contained earthenwares, much lower than common inhumations (56.4%, 515 out of 912). Moreover, the non-significant result of the Kendall's τ coefficient, unlike that for the common inhumations, suggests that there is no positive correlation between differing frequencies of trade ceramics and earthenwares. The chi-squared test (Table 5-

54) reveals that the distribution of headless burials with/without trade ceramics across with/without earthenwares, is significantly different at the 0.05 level, but not at the 0.01 level as for most of the common inhumations (see summary table of Table 5-54; also cf. Table 5-1).

In regard to the general distribution of location relationship (Table 5-56), because of the sample size, the chi-squared test is not applicable to the distribution of trade ceramics and earthenwares across ten body parts (Table 5-57). With regard to the spatial polarities, chi-squared tests reveal (see Table 5-58 to Table 5-61) that the pattern is different between common inhumations and headless burials (see summary table of Table 5-62; also cf. Table 5-17 to Table 5-20), although the "right/left" is un-applicable. For headless burials, there is no significant difference in the distribution of trade ceramics and earthenwares across "on/off," "side/central," and "upper/lower" body parts. For the common inhumations in general, the differences among three contrasts of "on/off", "side/central", and "upper/lower" are all significant, only the "right/left" contrast is not.

Therefore, although there were nearly 60 per cent of the headless burials containing pottery vessels, which is not too far from the 70 per cent of the common inhumations, the examinations of quantity and location relationships suggest that there exists a clear difference between headless burials and common inhumations.

EA\TC	0 TC	1 TC	2 TCs	3 TCs	4 TCs	5 TCs	6 TCs	7 TCs	Sum
0 EA	19	3	9	1	1	0	0	0	33
1 EA	3	3	1	1	2	0	0	0	10
2 EAs	1	3	2	0	0	0	0	0	6
3 EAs	0	1	0	0	0	0	0	0	1
4 EAs	0	0	0	0	0	0	0	0	0
5 EAs	0	0	0	0	0	0	0	0	0
Sum	23	10	12	2	3	0	0	0	50

Table 5-53 Cross-distribution of supine headless burials showing quantities of trade ceramic and earthenware vessels at seven Calatagan sites (Kendall's τ is 0.20, which is not significant at the 0.05 level).

	Burials without TC	Burials with TC	Sum
Burials without EA	19 (15.2)	14 (17.8)	33 (66.0%)
Burials with EA	4 (7.8)	13 (9.2)	17 (34.0%)
Sum	23 (46.0%)	27 (54.0%)	50

Table 5-54 Observed and expected numbers of supine headless burials with/without trade ceramics and earthenwares at seven Calatagan sites (χ^2=5.24>$\chi^2_{1\text{-}0.05(1*1)}$=3.84; phi-squared value ϕ^2= 0.105; Yule's Q value Q =0.63).

Burials	Common inhumations	Supine headless burials
w/ TC w/ EA	315 (34.5%)	13 (26%)
w/ TC no EA	112 (12.3%)	14 (28%)
no TC w/ EA	200 (21.9%)	4 (8%)
no TC no EA	285 (31.3%)	19 (38%)
Total Burial	912 (100%)	50 (100%)
Kendall's τ	Significant τ = 0.304	Non-significant τ = 0.20
With /Without Pottery Vessel	Significant* χ^2=97.84 ϕ^2= 0.11 Q =0.60	Significant** χ^2=5.24 ϕ^2= 0.105 Q =0.63

Table 5-55 Summary table of statistical results (chi-squared χ^2; phi-squared ϕ^2; and Yule's Q) for the distribution of common inhumations and supine headless burials with (w/) and without (no) trade ceramics (TC) and earthenwares (EA) of seven Calatagan sites (*chi-squared test is significant at both the 0.01 and 0.05 levels; **chi-squared test is significant at the 0.05 level only).

headless	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
EA	1	2	1	1	1	0	0	0	1	0	0	0	0	1	1	0
TC	2	2	2	0	0	1	0	2	0	3	3	1	1	2	0	1
Sum	3	4	3	1	1	1	0	2	1	3	3	1	1	3	1	1
	17	18	19	20	21	22	33	44	55	66	77	88	99	100	NA	Sum
EA	0	0	0	2	0	2	1	1	0	0	1	2	1	1	5	25
TC	4	2	0	1	0	3	0	2	4	1	5	1	1	1	7	52
Sum	4	2	0	3	0	5	1	3	4	1	6	3	2	2	12	77

Table 5-56 Distribution of earthenware and trade pottery vessels across 30 body positions among supine headless burials at seven Calatagan sites.

headless	Around head (AH)	Head (SK)	Chest (CH)	Right upper limb (RU)	Left upper limb (LU)	Pelvis (PV)	Between legs (BL)	Right lower limb (RL)	Left lower limb (LL)	Around feet (AF)	Total
TC vessels	6	1	1	6	3	6	7	6	5	4	45
EA vessels	4	1	1	1	2	3	2	1	1	4	20
Total	10	2	2	7	5	9	9	7	6	8	65

Table 5-57 Distribution of earthenware and trade pottery vessels at 10 body parts among supine headless burials at seven Calatagan sites.

Headless	**Trade ceramics**	**Earthenwares**	**Sum**
"On" body (SK+CH+RU+LU+PV+BL +RL+LL)	**35 (32.5)**	**12 (14.5)**	**47**
"Off" body (AH+AF)	**10 (12.5)**	**8 (5.5)**	**18**
Sum	**45**	**20**	**65**

Table 5-58 Observed and expected numbers of trade ceramics and earthenwares between "on" and "off" body parts among supine headless burials at Calatagan sites (χ^2=2.19<$\chi^2_{1-0.05(1*1)}$=3.84; Number in parentheses is expected count).

Headless	**Trade ceramics**	**Earthenwares**	**Sum**
Right body (RU+RL)	**12**	**2**	**14**
Left body (LU+LL)	**8**	**3**	**11**
Sum	**20**	**5**	**25**

Table 5-59 Observed and expected numbers of trade ceramics and earthenwares between right and left body parts among supine headless burials at Calatagan sites (chi-squared test is un-applicable).

Headless	**Trade ceramics**	**Earthenwares**	**Sum**
Side body (RU+RL+LU+LL)	**20 (18.6)**	**5 (6.4)**	**25**
Central body (SK+CH+PV+BL)	**15 (16.4)**	**7 (5.6)**	**22**
Sum	**35**	**12**	**47**

Table 5-60 Observed and expected numbers of trade ceramics and earthenwares between side and central body parts among supine headless burials at Calatagan sites (χ^2=0.85<$\chi^2_{1-0.05(1*1)}$=3.84; Number in parentheses is expected count).

Headless	**Trade ceramics**	**Earthenwares**	**Sum**
Upper body (SK+CH+RU+LU+PV)	**17 (18.6)**	**8 (6.4)**	**25**
Lower body (BL+RL+LL)	**18 (16.4)**	**4 (5.6)**	**22**
Sum	**35**	**12**	**47**

Table 5-61 Observed and expected numbers of trade ceramics and earthenwares between side and central body parts among supine headless burials at Calatagan sites (χ^2=1.18<$\chi^2_{1-0.05(1*1)}$=3.84; Number in parentheses is expected count).

	Common inhumations	Supine headless burials
TC	746	45
EA	678	20
On /Off Body	Significant χ^2=123.36 ϕ^2=0.087 Q =0.54	Non-significant
Right /Left Body	Non-significant	Un-applicable
Side /Central Body	Significant χ^2=20.91 ϕ^2=0.030 Q = -0.36	Non-significant
Upper /Lower Body	Significant χ^2=38.42 ϕ^2=0.056 Q =0.48	Non-significant

Table 5-62 Summary table of statistical results (chi-squared χ^2; phi-squared ϕ^2; and Yule's Q) for the spatiality tests (on/off; right/left; side/central; and upper/lower body parts) of pottery vessel distribution among common inhumations at seven Calatagan sites.

SUMMARY

The initial hypothesis of this research is that trade ceramics were seen as a prestige good in protohistoric Calatagan mortuary practices with a status superior to that of local earthenwares. Based on previous studies, the superior status of trade ceramics should correspond to several hypothesised relationships: 1) There exists an "inverse relationship" in quantity so that the more trade ceramics present in a burial, the fewer earthenware vessels it contained. 2) The association relationship suggests that burials with metal tool or glass adornment tend to have more trade ceramics than those burials with fewer or no metal or glass objects. 3) In terms of the spatial distribution of pottery vessels, it is expected that a specific item is likely to be placed at specific body locations. 4) Moreover, such differential distribution is not only thought to be between trade ceramics and earthenwares, but also among various types of trade ceramics to represent their internal gradation of value. 5) Finally, since earthenwares which imitate trade wares are assumed to have been a cheaper version, imitation ware should, therefore, occur more often in burials with fewer or no trade ceramics.

After investigating these key hypotheses through statistical analysis, in general, it is difficult to say that there existed a simple, clear differentiation between the social use patterns of trade ceramics and of local earthenwares that would suggest trade ceramics had superior status. In terms of the inverse quantity relationship, Kendall's τ and Yule's Q correlation coefficients suggest there is a positive relationship, not a negative one as expected, between trade ceramics and earthenwares. Burials with trade ceramics were likely to have earthenwares as well: most had one or two earthenwares, and those without earthenwares or containing three or more items were rare, no matter how many trade ceramics there were in a burial.

In regard to the association relationship, the distributions of burials with metal tools, glass adornments, and clay spindle whorls across different frequencies of pottery vessels are more complicated than presumed. The distribution of burials with and without metal tools across differing quantities of trade ceramics and of earthenwares, was significantly different. Although further investigation reveals that the difference between fewer (one or two items) and more (three and more) trade ceramics was significant, there was no such difference for earthenwares. The results seem to suggest that burials containing metal tools tend to have more trade ceramics. The results for burials with and without clay spindle whorls were similar to that for trade ceramics, however, the distribution of burials with or without glass adornments across differing quantities of trade ceramics and earthenwares was not different.

In terms of the hypothesised relationship of location, trade ceramics and earthenwares were not distributed in the same way across various body positions: trade ceramics significantly occur over specific positions such as the head, chest, both palms, pelvis, right knee, and the area between the upper legs; earthenwares predominantly comprise most of the pottery vessels placed around the head and around the feet. Their differences clearly display specific body spatiality: trade ceramics preferably placed at the "upper", "central", and "on" body parts, earthenwares more often placed at the "lower", "side", and "off" body parts.

Further investigation of the hypothesised relationship of gradation reveals that the variation in spatiality was not only shown between trade ceramics and earthenwares in general, but also among different forms of pottery vessels. Bowls and saucers were quite evenly distributed across various body parts, while jars and jarlets were placed around the head and the feet, similar to most earthenwares. In contrast, plates were very

much clustered along the "central" body parts: skull, then chest and pelvis, to the area between the legs. The majority of earthenwares were clustered around the head and around the feet, but they also showed variation in body spatiality. The most common *Palayok* ware was the only form encountered across all ten body parts, even though there was one at the skull and some at other "central" body parts. The squashed-form *Kinalabasa* ware was missing from the skull and chest. Various earthenware imitations were more often placed at "on" body parts than the other two common forms.

Finally, regarding earthenware imitations specifically, there existed a positive relationship between them and trade ceramics: burials with the former were likely to contain trade ceramics as well. Nevertheless, the chi-squared tests do not directly indicate that imitations were considered inferior-status goods, or superior or the same, compared to trade ceramics. On the other hand, the correspondence analysis suggests that the use pattern of imitations was different from most common trade ceramics and other earthenwares: they were somewhere in between. This evidence can, at least, partly support the proposal that the use pattern of imitations should be close to their trade ceramics counterparts rather than to other common forms of earthenwares.

In addition to the five hypothesised relationships regarding common inhumations as a coherent entity, the superiority of trade ceramics can also be examined via different variables: age, tooth-filing, orientation, site, and uncommon burials. Each variable enhances our comprehension of how trade ceramics and earthenwares were discriminated between in certain social relationships.

In terms of age, the appearance of trade ceramics in infant and child burials suggests social ranking concerning hereditary component. There is no significant difference among the three age groups of adults, juveniles, and children in their use

patterns of pottery vessels, which suggests that protohistoric Calatagan people treated their young the same as adults.

With regard to tooth-filing, as the individual would probably need economic means to have this done, and as tooth-filing might be a form of status symbol, it is suggested that burials of individuals with tooth-filing should contain more pottery vessels. Statistical tests show no significant difference in their use of pottery vessels, though variations do exist.

Orientation of burials is important in elucidating the relationship between mortuary customs and socio-cultural factors. It is clear that the west direction was not popular in mortuary practice, although it was still carried out. There was also no significant difference between west and non-west orientations in terms of differing frequencies of trade ceramics and earthenwares.

Differences among the seven sites are another connotation of exposing the relationship between socio-cultural factors and mortuary practices. The distribution and use pattern of pottery vessels across these sites is significantly different: the larger sites had more people who could access trade ceramics and earthenwares, and contained more grave goods.

Finally, the statistical results suggest that there existed a general difference between headless burials and common inhumations. It is not only represented in the inverse quantity relationships in which more headless burials were without pottery vessels, and fewer had both trade ceramics and earthenwares, but also seen in the location relationship in which there was no difference in the distribution of trade ceramics and earthenwares across various body polarities.

The quantitative analyses reveal that there was no simple dichotomy between trade ceramics and earthenwares in the mortuary practices of late protohistoric Calatagan society. In terms of the various hypothesised relationships, there do exist particular differences between the two types of pottery vessels, and some might indicate the superior status of trade ceramics. However, what the study actually exposes is a complicated picture in their social use rather than a simple relationship.

CHAPTER SIX
DISCUSSION

This chapter will discuss important issues raised from the analyses in the preceding chapters, including: 1) Whether it is appropriate to compare trade ceramics and earthenwares under one value system of grave goods, or whether there are two contexts in which trade ceramics and earthenwares dominate, respectively; 2) Whether people in Calatagan had their own tastes or preferences for trade ceramics; which could be represented through the physical properties of objects; 3) Whether the value of trade ceramics changed, or even decreased, over time and space; and finally, 4) What will improve our understanding of late protohistoric Calatagan in light of trade ceramics, within the context of maritime Southeast Asia ca. 1500 CE.

TRADE CERAMICS OF PRESENT-GIVING VS. EARTHENWARES OF FOOD-OFFERING IN CALATAGAN MORTUARY PRACTICE

The complicated pictures revealed by this study suggest that trade ceramics cannot be seen as a single, coherent category of grave goods with superior status to all earthenwares. As the value theory discussed in Chapter Two, value judgement is only effective in a specific social setting. That is, when we assign value to two objects active within one setting, the same system of value criteria are used. For example, when A (trade ceramics) can be seen as more precious than B (earthenwares), it is assumed that A and B are comparable by the same value criteria (the value system of grave goods) in similar social situations (mortuary practice) by a specific group of people (who lived in Calatagan during the 15th and 16th centuries AD). This view, therefore, raises an essential question of whether it is appropriate to treat all pottery vessels within one simple, coherent value system of grave goods. Is it possible, alternatively, that the arrangements of trade ceramics and local earthenwares depended on very different

considerations and could, perhaps, be seen as two separate contexts within mortuary practice?

According to his observation in situ in Calatagan fieldwork, Fox suggested two kinds of use patterns of trade ceramics and earthenwares: "the trade potteries were wrapped with the remains, whereas the local earthenwares were merely placed in the graves" (Fox 1959: 357). He also observed that food, fish and animal bones, shells, and other organic stuff, were frequently found in the earthenware vessels, and those vessels were often covered with trade ceramics, especially bowls (ibid: 355). The condition of archaeological materials nowadays often disallows examination of every earthenware pot to see whether it contained food or not. Therefore, if Fox's observation is acceptable, then it is reasonable to assume that earthenwares and trade ceramics were used in two different contexts of Calatagan mortuary practices: one was the food offering, another was present giving. The former could be a funeral rite, i.e. a feast shared by mourners, held around the grave; or they might offer food to the dead; or could be both. After the funeral, earthenware pots were often placed, or discarded, around and behind the head or feet of the corpse. The latter was a special arrangement for giving presents to the dead, either as gifts or as a symbolic representation. Trade ceramics in such cases were often placed directly on, or near the body, e.g., inverted over the pubic area or beneath the palms.

Fox's observation is then, at least partly, supported by the results of this research. Assumed to be food containers, more than 67 per cent of earthenwares (455 out of 678) were placed around the head or the feet (Table 5-16; Figure 5-6). Another 14 per cent (92 out of 678) were also placed near the legs. In contrast, less than 38 per cent of trade ceramics (281 out of 746) were around the head or the feet. It is clear that earthenwares

and trade ceramics were dominant respectively in separate body areas, which could be assumed to be different contexts.

Obviously, the separation of two contexts and two groups of pottery vessels are not absolute. There are always pottery vessels used in crossed situations. As Fox observed (1959: 355), earthenware vessels containing food were often covered with trade ceramics, especially bowls. This could explain why almost 30 per cent (157 out of 551, see Table 5-22) of bowls, plates and saucers were placed around the head and feet, together with almost 70 per cent of earthenwares. It would be interesting to know whether the trade ceramics placed with earthenware pots are different, especially in decoration patterns, from those used on the body. Unfortunately, there is no information available at present.

The separation develops into another important question of how these two contexts related in terms of the patterns of trade ceramics and earthenwares. That is, for example, to ask whether a burial with more food-offering earthenware pots would also accompany more present-giving trade ceramics, or vice versa? Table 6-1 reveals that, for 515 common burials containing pottery vessels, 60 per cent (310 cases) had earthenwares placed around the head and the feet, almost half (254 cases) had trade ceramics placed at the "on" body areas, and a quarter of the burials had both pottery vessels placed at both locations. However, for 205 burials without earthenwares placed around the head and the feet, 63 per cent (130 cases) had trade ceramics placed at the "on" body areas. Conversely, 60 per cent (186 out of 310 cases) of the burials with earthenwares placed around the head and the feet had no trade ceramics placed at the "on" body areas. Such negative association is clearly shown in the negative Yule's Q value (Q = -0.44). There is no trend, however, that a burial with more earthenwares

placed around the head or feet is likely to have more trade ceramics at the "on" body areas (Table 6-3). Burials with three or more earthenwares or trade ceramics were quite rare.

This type of negative relationship between pottery vessels and their locations is very different from the positive relationship simply between trade ceramics and earthenwares. The preceding analysis of common inhumations with or without trade ceramics and earthenwares (Table 5-1) suggests a positive correlation (Yule's $Q = 0.60$): a burial with earthenwares more often has trade ceramics as well, although in low correlation (see Table 5-2, Kendall's τ coefficient is 0.304). That means there is no absolute trend that burials with more earthenwares are likely have more trade ceramics. For burials with earthenwares, regardless of how many items of earthenwares, most had one or two items of trade ceramics, while burials with three or more items were rare (see Table 5-3 and Table 5-4).

However, data of the tables which show simple relationships between trade ceramics and earthenwares, also mix up much of the information because they include the distribution of various pottery vessels at different body locations of all common inhumations. Previous interpretations (e.g. Junker 1999a: 177) of the social value of pottery vessels in the Philippines suggested an inverse relationship between the numbers of earthenwares and trade ceramics. Based on simple, quantitative distribution, such an inverse relationship is disproved by this research (see Table 5-1 to Table 5-4): a burial with earthenwares more often had trade ceramics as well. However, when we look into these burials with pottery vessels only, and focus on their sophisticated patterns of trade ceramics placed "on" the body areas and the earthenwares placed around the head and feet, a clearer picture emerges. There exists an inverse relationship that a burial without

earthenwares placed around the head or the feet is more likely to have trade ceramics placed at the "on" body areas, and vice versa.

Food offering constructs the essential part in most funeral rituals all over the world (Barley 1995; Lee 2007; Metcalf and Huntington 1991; Parker Pearson 1999). Food containers thus comprise an identical element of mortuary practice. For example (Metcalf and Huntington 1991: 64-74), the Berawan of central northern Borneo must prepare a large quantity of rice wine for great crowds of guests to attend the funeral, which lasts for many days. To make the wine requires stacking rice in large jars, from which the rice wine is also consumed. The corpse is also stored in a jar after washing and dressing: "The jars used for rice wine are identical to those used for primary storage of corpses" (ibid: 73). For the Berawan mortuary practice, social gatherings and corpse preparation are both necessary rites. Although jars are used in both rites, they should not be mixed up or confused: Berawan elders often pick out one specific jar for her/his own corpse container and no longer want it used for making rice wine. For most archaeological studies, it is not easy to identify various grave goods from different ritual contexts (e.g. Barrett 1994: 116). This research statistically reveals, as previously suggested by Fox in his fieldwork observations, that most earthenwares and trade ceramics could be used in distinctively different mortuary contexts, and constitute a sophisticated, inverse relationship.

	Burials without TC	Burials with TC	Sum
Burials without EA	**75 (14.6%)**	**130 (25.2%)**	**205 (39.8%)**
Burials with EA	**186 (36.1%)**	**124 (24.1%)**	**310 (60.2%)**
Sum	**261 (50.7%)**	**254 (49.3%)**	**515 (100%)**

Table 6-1 Cross-tabulation of common inhumations with pottery vessels, showing burials with/without trade ceramics at the "on" body areas and earthenwares at AH/AF areas (χ^2=27.08>$\chi^2_{1-0.05(1*1)}$=3.84; phi-squared value ϕ^2= 0.05; Yule's Q = -0.44).

	0 TC	1 TC	2 TC	3 TC	4 TC	5 TC	6 TC	Sum
0 EA	75 (14.6%)	73 (14.2%)	38 (7.4%)	12 (2.3%)	4 (0.8%)	2 (0.4%)	1 (0.2%)	205 (39.8%)
1 EA	122 (23.7%)	39 (7.6%)	23 (4.5%)	6 (1.2%)	8 (1.6%)	0	0	198 (38.4%)
2 EA	60 (11.7%)	26 (5.0%)	11 (2.1%)	2 (0.4%)	3 (0.6%)	0	0	102 (19.8%)
3 EA	3 (0.6%)	4 (0.8%)	1 (0.2%)	0	0	0	0	8 (1.6%)
4 EA	1 (0.2%)	0	0	1 (0.2%)	0	0	0	2 (0.4%)
Sum	261 (50.7%)	142 (27.6%)	73 (14.2%)	21 (4.1%)	15 (2.9%)	2 (0.4%)	1 (0.2%)	515 (100%)

Table 6-2 Cross-distribution of common inhumations with pottery vessels, showing quantities of trade ceramics at the "on" body areas and earthenwares at AH/AF areas (data excludes the burials with pottery vessels but without location information).

	Without TC	With 1-2 TCs	With 3-6 TCs	Sum
Without EA	**75 (103.9)**	**111 (85.6)**	**19 (15.5)**	**205 (39.8%)**
With 1-2 EAs	**182 (152.0)**	**99 (125.2)**	**19 (22.7)**	**300 (58.3%)**
With 3-4 EAs	**4 (5.1)**	**5 (4.2)**	**1 (0.8)**	**10 (1.9%)**
Sum	**261 (50.7%)**	**215 (41.7%)**	**39 (7.6%)**	**515 (100%)**

Table 6-3 Observed and expected numbers of common inhumations with differing quantities of trade ceramics at the "on" body areas across differing quantities of earthenwares around the head or the feet (χ^2 analysis is not available here because one expected to be less than 1, and there are more than 20% of the expected values less than 5).

COMSUMPTION BEHAVIOUR AND PROPERTIES OF TRADE CERAMICS

The results of quantitative analyses in this research reveal not only that there is no simple relationship which shows that trade ceramics were precious grave goods with superior status to local earthenwares, but also disclose that trade ceramics should not be seen as a coherent group of grave goods all with the same social value. This is evidenced by the different distribution of various types of trade ceramics, as well as their comparison with earthenwares. The analysis results of hypothesised relationships of gradation (Table 5-22, Figure 5-7, and Figure 5-9) suggest there is a clear difference among five major forms of trade ceramics placed at different body positions. For example, almost 30 per cent of bowls, plates and saucers, but more than 65 per cent of jars and jarlets, were placed around the head and the feet, together with most of the (70%) earthenwares. Such significantly different distributions among various types of trade ceramics inspire the idea of whether ancient Filipinos in Calatagan had a unique taste toward trade ceramics, especially in regard to different physical properties.

Although the value of objects is not frozen in their physical property nor crystallized during the production process, as discussed in Chapter Two, physical properties always play an important role in determining why and how social value is attached to material objects. Pottery is a supreme example of a value-added commodity via their physical properties. For instance, Susan Sherratt (1994: 63; 1998: 295-6; 1999: 173) argues that the physical property of pottery is the key reason why Mycenaean and Greek painted pots were so important in the Mediterranean Bronze Age trade system. The raw materials of pottery are not rare, nor need long-term investment, nor are the technology and skills complicated. Pottery could be cheap, mass-produced objects, as well as prestige goods through the value-added process. The pictorial representations of

chariots and bulls on Mycenaean pottery, for example, are often treated as evidence that these vessels were used by an elite group with an aristocratic lifestyle (see also van Wijngaarden 1999a: 32, note 92). In recent years, archaeological studies concerning the importance of physical properties of material objects extend even to rarely touched areas such as colour (Jones and MacGregor 2002) and sound (Hosler 1994). These studies belong to the growing body of work considering the notion of 'materiality' or 'physicality' in material culture studies (Rival 1998; Weiner and Schneider 1989).

With regard to the issue of whether ancient Filipinos had their own tastes and preferences toward trade ceramics, and how could it be investigated archaeologically, most previous studies (Beyer and de Veyra 1947; Fox 1967; Jocano 1975: 146) assumed that they were active consumers based on two pieces of archaeological observations in terms of production and distribution: 1) many of the trade ceramics, especially those from South China, found in the Philippines were not familiar in mainland China, and were possibly exclusive for specific customers; and 2) comparative examination of trade ceramics found in the Middle East and Island Southeast Asia reveals that they comprise very different styles and variations (Addis 1970: 33; Fox 1967: 59). Thus, ceramics exported to the Philippines might have come from specific kilns which manufactured special products for the Philippine market, even being ordered by ancient Philippine elites (Nishimura 1992).

Though early Chinese documents (Wang 1349, in Wu 1959: 108-111) seem to support the hypothesis of ancient Filipino preference for specific trade ceramics, there is, as yet, no solid archaeological study on this topic. Moreover, although it is clear that a large quantity of ceramics made in South China were exclusively for the foreign market, the Philippine Islands did not seem to have been a special target for those trade items.

There is no unusual difference in trade ceramics found in the Philippine Archipelago and other areas of Island Southeast Asia. A more serious consideration is that it is difficult to argue, archaeologically, whether the pattern reveals a unique preference for trade ceramics in a local context, or if it merely reflects patterns of pottery production and/or maritime circulation. As economic historians have revealed (Abu-Lughod 1989; Hall 1985; Reid 1993), maritime trade even in pre-modern Southeast Asia was a complicated business. There existed many different power groups in Southeast Asian maritime trade, and each one had its own network of suppliers, retailers, and customers. Thus, what the ancient Philippines received, to a large extent, was not necessarily what they preferred but what was supplied to them, which ultimately depended on which maritime merchant they contacted and what cargo the supplier prepared. Of course, ancient Filipinos could have refused to engage in trade for wares they did not want. This broader, external factor must be included while considering the possible implication of the distribution of trade ceramics throughout the island world. This type of investigation, however, is beyond this research, and even beyond archaeological study alone.

Archaeological evidence can approach this issue of preference from another perspective: consumption behaviour. Since the exotic goods must be embedded in the local cultural context, it is reasonable to investigate the preference issue in terms of consumption behaviour within a specific cultural context. Southeast Asian archaeologists have only recently begun to consider such issues seriously. One good example is Miksic's (2000) comparative study of trade ceramics found in three Singapore sites and some other locations from neighbouring Riau Islands; most from the fourteenth-century stratum or contemporary context. While these trade ceramics are very similar in general form, glaze, decoration and assemblage, they are often from vastly different contexts and were thus employed to make local cultural statements.

Fourteenth century Singapore, as with many other port polities along the Melaka Strait, was basically a Malay community of the early Islamic period. Disposal contexts reveal that trade ceramics were not used in rituals, ceremonies, nor especially in mortuary contexts. Moreover, the differential distribution of trade ceramic types suggests they had different status connotations, although the distinction was not in the quality but in the style, such as decorative motifs (ibid: 216). In contrast, people of the Riau Islands, possibly the *Orang Laut* or the "Sea People" who comprised many small groups and who were mainly sea-based hunter-gatherers, and converted late to Islam, had different tastes for trade ceramics. Accessibility was not a problem, but they used them in a very different way to their Malay neighbours, for example, such as grave goods.

Ethnographies from Southeast Asia also provide more evidence on consumption behaviour of trade ceramics. Since the beginning of exploration and ethnographic fieldwork in the late 19th century, it had been recognized that Southeast Asian islanders kept their own preferences, or tastes, toward specific types of trade ceramics (Chin 1977; Cole 1912: 12-9; Harrisson, B. 1990; Spinks 1965: chapter 5; Valdes et. al. 1992). Trade ceramics participated in many salient life events in island societies such as head-hunting rituals (Harrisson, T. 1967); marriage ceremonies (Kaboy and Moore 1967: 24-26); and mortuary practices (Metcalf 1982: 80-84). There is often a sophisticated classification of trade ceramics, which represents the unique local taste and value system. The elaborate, local classification system is formulated on the mythical/historical background of an individual item, and on objective criteria concerning its physical properties such as body form, glaze colour, and surface decoration, even the sound of tapping on the ware (Fox 1979: 193).

The Melanau people of West Borneo provide us with a good example of how trade ceramics are classified and used in their ritual life. For example, blue-and-white plates are the essential part of bride wealth in a Melanau wedding (see Table 6-4; Kaboy and Moore 1967: 25; Morris 1953: 133; 1991: 156). There are many types of blue-and-white plates, and some are more acceptable than others for wedding purposes. Each type has a specific name, which is basically based on its decoration motif, and most have Chinese characters on the base. The plate without a Chinese seal (*meluku batut*) is not acceptable as a wedding gift. Blue-and-white plates are also necessary for Melanau mortuary rituals, and even the *meluku batut* is acceptable (Kaboy and Moore 1967: 27). Plates are put under the corpse at the head, each shoulder, hand, and each foot, making a total of seven items. If the family can afford more items, it is acceptable to add ceramics to the grave.

Decoration on plate	Sungai[1] Melanau	Medong[2] Melanau	Rank[3] notes
Phoenix	*Meluku bangau*	*Meluku bangau*	Highly valued
Animal and floral (maybe under-glaze colour)		*Meluku ngingit*	Highly valued (only less than *bangau*)
Animals of various types		*Meluku teraseg*	
Dragon or other ferocious looking creature	*Meluku kalitimou*	*Meluku kratimau*	Acceptable bride wealth but not liked
Orchid	*Meluku lukud*		
Sailing boat	*Meluku keniwan*		
Bat	*Meluku kenawai*		
Cuttlefish (?)	*Meluku sutong*		
A plate without Chinese seal on the base	*Meluku batut*	*Meluku batut*	Not acceptable as bride wealth

Table 6-4 Classification of blue-and-white plates used as bride wealth in two Melanau groups, West Borneo (1: Kaboy and Moore 1967; 2: Morris 1953; 1991; 3: according to Morris ibid)

The case of the Melanau people provides us with an interesting parallel to the Calatagan people, since they both use plates under certain body positions. The Melanau had a sophisticated system for using blue-and-white plates in bride wealth. It is not clear, though, if the classification of blue-and-white plates is also followed in the mortuary context. In Calatagan, based on the analytical results (see Figure 5-7 and Figure 5-9), it is reasonable to suggest that further study should focus on more sophisticated properties,

like decorative motifs or glaze types, to reveal more socio-cultural dimensions of trade ceramics in local context.

CHANGE OF VALUE OVER TIME AND SPACE

In many studies of the socio-cultural evolution of complex society, especially of chiefdoms (Earle 1997; Frankenstein and Rowlands 1978; Wells 1980), it is often argued that exotic, prestige goods were first restricted to a few elites because of scarcity and symbolic value; they then gradually circulated to non-elites because of increasing quantity and accessibility, and changed in their value. Also, exotic goods were seen as an essential means of wealth finance used by elites in central settlements as political currency to compensate their people or allies in smaller, subordinate communities. That is, small-scale communities with less powerful elites might have had limited access to exotic goods, or obtained them as gifts from regionally powerful chiefs within an alliance network. Therefore, over time and space, the social value assigned to material objects could decrease.

In terms of trade ceramics found in the Philippines, Junker's (1999a: 171-80) interpretation of their distribution as grave goods follows this line of a dichotomous viewpoint. There were only a few rich burials with trade ceramics during the 11th to 14th centuries, against a large number of poor burials with few or no grave goods. In contrast, it seemed trade ceramics were no longer exclusively associated with elite habitation zones in many of the 15th to 16th century sites, while many burials contained those items. She suggests that a substantial increase in access to exotic goods in non-elite sectors of the settlement reflected the even greater complexity in social status hierarchies.

A similar case is encountered in the Dumaguete polity of southeast Negros Oriental; the inter- and intra-site distributions of trade ceramics displayed a clear change

from the 14th, 15th centuries to the 16th century and later (Bacus 1999: 72-5). Among 72 sites discovered in an approximately 30 square kilometres area, the 12th to 15th century trade ceramics are only found at four sites. Evidence, excavated remains and site size, suggest that one was a chiefly centre and two were lesser elite sites. In contrast, the 16th and 16th to 17th century trade ceramics are found in 11 sites. Their distribution is not only considerably wider than in the previous period, they also occur at smaller, presumably non-elite inhabitation sites. Bacus proposes that "This distribution suggests changing political dynamics involving, for example, different valuation of tradewares or direct elite-commoner relations" (ibid: 73).

In Calatagan, according to this line of thinking with regard to space dimension, there should be more people in large settlements who could obtain pottery vessels, especially access to trade ceramics, than in smaller communities. The test results of the difference among sites (see Table 5-40 to Table 5-52) clearly point out that there is a significant difference among seven sites, especially the clear contrast between large and small sites, in terms of the distribution of burials containing pottery vessels. The results also prove that the bigger sites tend to have more burials containing pottery vessels than the smaller sites (see esp. Table 5-45 and Table 5-51).

Therefore, it is worth noticing the difference between trade ceramics and earthenwares in their distribution between large and small sites. The distribution of burials with or without trade ceramics across large and small sites is significantly different (Table 5-45); the same is so for the earthenwares (Table 5-51). In terms of the strength of association, both trade ceramics and earthenwares have positive Yule's Q values, although the Yule's Q value (Q=0.42) for earthenwares is much stronger than for trade ceramics (Q= 0.26). In addition, the distribution of burials with less (one or

two items) or more (three or more items) earthenwares across large and small sites is significantly different (Table 5-52); and with an even stronger Yule's Q value (Q= 0.63), but is not different for the distribution of trade ceramics (Table 5-46). Such results suggest that, although burials in large sites are more likely to have pottery vessels than those in small sites, there is no difference between trade ceramics and earthenwares with this type of trend. Quite the opposite, in fact; the contrast between large and small sites is more significant for earthenwares than for trade ceramics. Also, burials in large sites alone are more likely to have more earthenwares, but no difference for those with trade ceramics.

How do we explain such patterns? One possibility is to take the difference of use function into consideration, as discussed in the preceding section, and to consider most earthenwares as food-offering objects in mortuary practice. Either more people in large settlements could offer earthenware vessels, or could offer more items, or they could gather more people to attend the funeral, thereby leaving more food-offering items. No matter which possibility is correct, the size of the site does affect the accessibility to the pottery vessel, but trade ceramic is not superior to earthenware. These results of quantitative tests defy the presumption of the regional distribution of prestige goods. The implication is as challenging as the case of the possible change of value over time, which I endeavour to demonstrate in the following.

With regard to the issue of change of value, most previous arguments rely on regional distribution patterns from surveys, with few excavated sites, and with too few cases from a single site.[1] To argue the issue of change in value over time, it is

[1] For example, Tanjay of Negros Oriental has only 19 burials for the earlier 12th-14th period and 12 for the

appropriate to have at least a well preserved multi-stratified site. Sites in Calatagan are not stratified sites. In fact, there are very few sites in Philippine archaeology available according to the standard. In order to touch on this important issue, one alternative is to use a nearby site which belongs to an earlier period, assuming similar geographical, historical, and socio-cultural conditions, although this could only be seen as an indirect analogy. Fortunately, there is one candidate in southwest Luzon: Pila, Laguna site (Tenazas 1968), another cemetery in southwest Luzon less than 100 km northeast of Calatagan. In terms of regional perspective, it is reasonable to construct a transformation pattern of trade ceramics use based on the comparison of the Calatagan data and this nearby Pila, Laguna site.

The Pila site is located on the south coast of Laguna de Bay (Figure 6-1), which is approximately 70 km southeast of Manila. Laguna de Bay is the largest inland body of water in the Philippines. It is not only rich in fishing and other wildlife, but this lake also connects with the sea through Manila Bay by navigable river. Although the archaeological potential of this area has long been known since the early 20th century (Beyer 1947: 250-1), there was no serious fieldwork undertaken until late 1968 by Rosa Tenazas, an anthropologist from the University of San Carlos in Cebu. Test pits were excavated at three, nearby localities.

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later 15th-16th period (Junker 1993a).

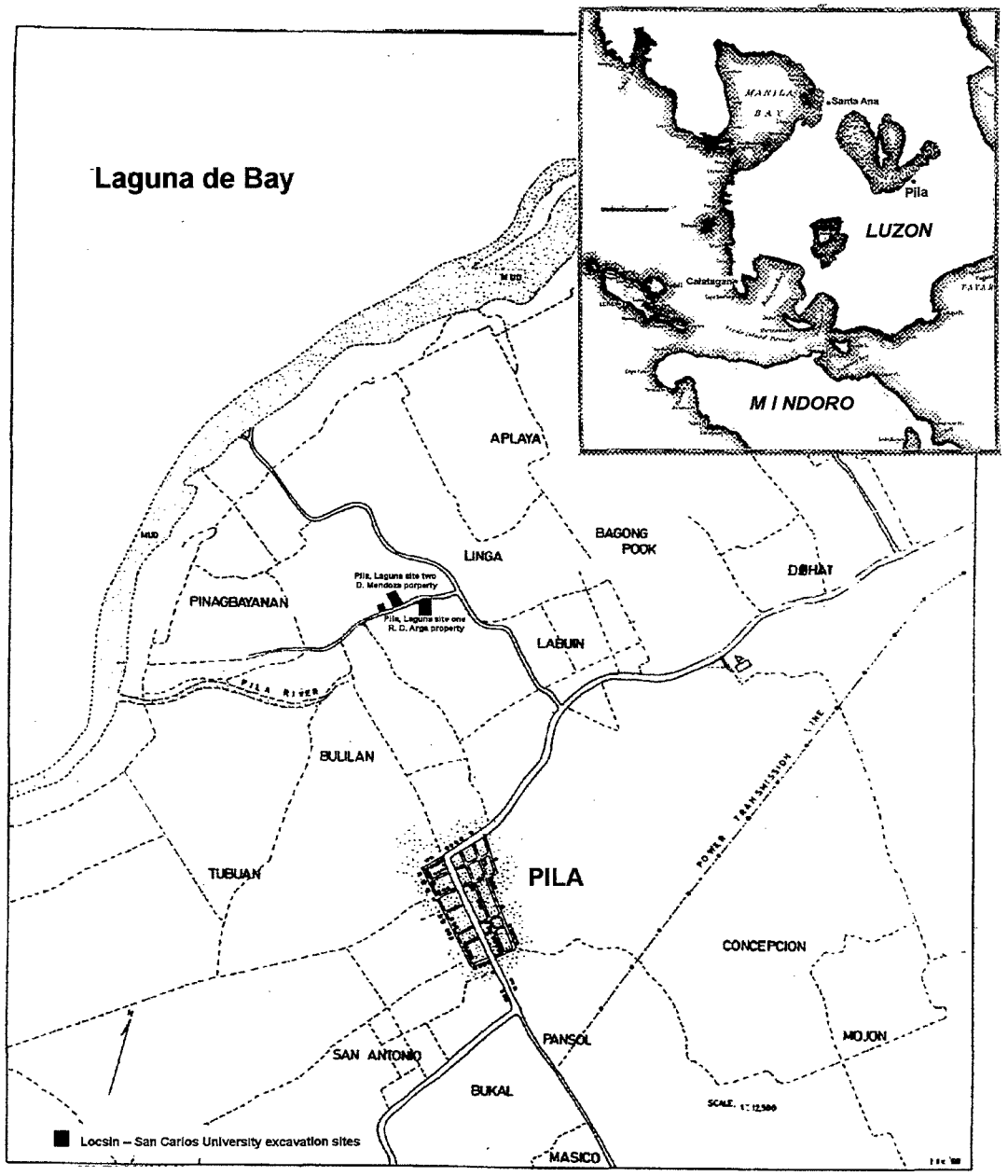

Figure 6-1 Location of Pila, Laguna cemetery site, SW Luzon (after Tenazas 1968: Fig. 1)

Natural Strata	Cultural Level	Date	Content
1		Modern	Interrupted by agricultural activity
2	Period IV	15^{th}-16^{th}	No habitation remains; 9 inhumations with 28 trade ceramics, 1 earthenware, 4 miscellaneous objects.
3	Period III	14^{th}	Richest in cultural remains; 50 cremations: 3 in earthenwares, 35 in trade ceramic pots; and 5 inhumations.
4	Period II	12^{th}-13^{th}	Rich in cultural remains; 174 inhumations with 626 trade ceramics, 81 earthenwares, 71 miscellaneous objects.
5	Period I	Iron age	No habitation remains but 3 burials with 4 earthenwares.
6			Sterile, natural soil.

Table 6-5 Stratified profile of Pila, Laguna, SW Luzon (data after Tenazas 1968)

Pila, Laguna, is a well-recorded stratified site; which is rare in the archipelago. There are six strata (1 to 6) with four cultural periods (Period I to IV) (see Table 6-5), and a total of 241 burials were unearthed.[2] The first, uppermost stratum, is a thin layer of light brown soil, occasionally interrupted by modern agricultural activity. The second stratum (cultural level, Period IV) is a layer of clay soil without habitation remains but nine inhumations, which contained 28 trade ceramics, one earthenware, and four miscellaneous objects. Fourteen of the trade ceramics were diagnosed as post-fourteenth-century blue-and-white wares. Thus, Period IV is considered to be correspondent to the 15th or 16th centuries, which is parallel to the sites in Calatagan.

The third stratum (Period III) is characterized by relatively soft black loam, rich in organic material. A sizeable quantity of cultural remains was recovered, including 55 burials. Almost all were cremations, 38 were in jar containers and 12 directly in the pit. There is only one radiocarbon date from this site, performed on a sample of bone dated to 1375±25 B.P (Tenazas 1968: 14). Period III is thought of as an intrusive or transitional period. The fourth stratum (Period II), with a thick layer of sandy clay, has the most burials (174 cases) but habitation remains were not as rich as those from Period III. The burials were all believed to be inhumation, with a preference for north/northeast orientation, which comprised 626 trade ceramics, 81 earthenwares, and 71 miscellaneous grave goods. Period II is assigned as pre-fourteenth-century because of the absence of blue-and-white wares and ancient Siam wares. The fifth stratum (Period I) has three burials, together with four earthenwares. These earthenware pots are very different in size, form and decoration compared to those from later periods. The

[2] For more detailed information of mortuary practice in Pila, Laguna, please see Appendix 11.

excavator sets this level as a late Iron Age date, just near the end of the first millennium AD. The last, sixth stratum is sterile natural soil which is under the water table.

In Table 6-6 and Table 6-7, I compare quantities of trade ceramics and earthenware vessels from Period II (a 12th to 13th centuries stratum) at Pila, Laguna, and from the common inhumations of Calatagan to examine changing patterns over time. The following important features can be seen:

1) The percentage of burials with trade ceramics in Pila (150 cases out of 174 burials, 86.2%) is much higher than in Calatagan (427 cases out of 912 burials, 46.8%).
2) The average number of trade ceramics in each burial in Pila (626 TCs in 150 burials, 4.2 items on average) is higher than in Calatagan (863 TCs in 427 common inhumations, 2.0 items on average).
3) The most trade ceramics in a single burial at Pila is 23, much higher than the 7 items in a single burial at Calatagan. The range of quantities of trade ceramics among the Pila burials is broader than at Calatagan. There were 18 Pila burials containing eight or more trade ceramics.
4) There were more burials with larger quantities of trade ceramics in Pila: 36.2% burials (63 out of 174) had one or two items; 39.7% burials (69 out of 174) had three to seven items; and more than 10% (18 cases) had more than seven items. In contrast, at Calatagan, most common inhumations had only one or two trade ceramics (320 out of 912 burials, 35.1%); those with three or more items were few in number (107 out of 912, 11.7%).
5) Most burials in Pila had no earthenwares (114 out of 174 burials, 65.5%). Of those that did, most only had one item (46 cases out of 60 burials with earthenwares, 76.7%). In contrast, less than half the common inhumations in

Calatagan had no earthenwares (397 out of 912, 43.5%), and burials with one or two items were very common. Among 515 burials with earthenwares, 282 cases (54.8%) had one item, and 200 cases (38.8%) had two items.

6) A chi-squared test suggests that, in both sites, the distribution of burials with and without trade ceramics across burials with and without earthenwares is significantly different. However, Yule's Q values for both sites are opposite: Pila has a negative Q= -0.66; Calatagan has a positive Q= 0.60. It indicates that, in Pila, burials without earthenwares tend to have trade ceramics.

These features present a complex picture and challenge the presumption that exotic trade wares are first restricted to a few elites, followed by circulation later opening up to non-elites. Others have argued that the restriction of foreign objects could indicate that a few 'rich' individuals obtained the large portion of exotic goods. For instance, Junker's interpretation of Santa Ana, Manila, another eleventh-fourteenth cemetery excavated by Locsin in the 1960s (Locsin and Locsin 1967), suggests that the social status of individuals was at least partly symbolized by extraordinary quantities of trade ceramics: "the nine 'richest' burials (comprising 4.5 percent of the burial population) yielded more than 25 percent of all recovered porcelains in the cemetery site" (Junker 1999a: 173). According to the model, we should see fewer burials in Pila having trade ceramics, and these burials could contain more items. The distribution in Pila, Laguna, shows that few burials contain more trade ceramics (18 burials with 8 or more trade ceramics), which did not appear in the later period at Calatagan. However, the descriptive statistics tell a different story. In Pila, Laguna, the "richest" burial (0.6%, one out of 174 burials) had 3.7 per cent of all recovered trade ceramics (23 out of 626 items), and the relatively "rich" burials (5.1%, 9 burials with 10 to 19 trade ceramics) had 20 per cent of trade ceramics (125 out of 626). In comparison, in Calatagan, the

"richest" burials (0.5%, five out of 912) had 4.1 per cent of trade ceramics (35 out of 863), and the relatively "rich" burials (5.0%, 46 burials with four to six trade ceramics) had 24.1 per cent of trade ceramics (208 out of 863). Therefore, in terms of the distribution of trade ceramics in the burials, it cannot be concluded that exotic goods were more restricted to a few elites in the earlier period than in the later period. The few burials containing more trade ceramics correspond to the wide accessibility in Pila, Laguna, while 86 per cent of the burials had at least one item, much higher than the 46.8 per cent in Calatagan.

On the other hand, the distribution of earthenwares is quite different to the distribution of trade ceramics. There were more burials without earthenwares in Pila, and burials contained fewer items. In addition, the chi-squared result reveals a reverse relationship (Yule's Q= -0.66) between trade ceramics and earthenwares for burials in Pila, which is positive for burials in Calatagan (Q= 0.60). Is this because the people in Pila tended to replace earthenwares with trade ceramics, or because they had a totally different attitude toward pottery vessels than the people in Calatagan? Unfortunately, there is not enough information to investigate this point. For example, it would be very helpful if we understood the spatial distribution within the burials, as this research did for Calatagan burials, to examine whether trade ceramics were used in two different sub-contexts: vessels used during the funeral rite and left behind;, and those used exclusively as presents to the dead.

Of course, the difference between Calatagan and Pila is not only chronological but also spatial. Pila, is not only located within a catchment area with more rich resources, but is also well-connected to Manila, the most important regional centre in southwest Luzon, by navigable river. With regard to the spatial factor discussed in the

first part of this section, it is clear that this geographic niche is quite important as well. That is, the picture represented in Pila cemetery suggests a community with more people who could access trade ceramics but few individuals who held onto extra quantity, although the "rich-poor" gap of accessing trade ceramics is not different from Calatagan. To understand the situation of Calatagan requires a geographical and historical approach in a wider framework, which will be further discussed in the next section.

EA\TC	0 EA	1 EA	2 EAs	3 EAs	4 EAs	5 EAs	Sum
0 TC	**8, 4.6%** (285, 31.3%)	**13, 7.5%** (125, 13.7%)	**3, 1.7%** (69, 7.2%)	**0** (5, 0.5%)	**0**	**0** (1, 0.1%)	**24, 13.8%** (485, 53.1%)
1 TC	**34, 19.5%** (57, 6.3%)	**6, 3.4%** (70, 7.7%)	**2, 1.1%** (49, 5.4%)	**0** (11, 1.2%)	**0** (1, 0.1%)	**0**	**42, 24.1%** (188, 20.6%)
2 TCs	**16, 9.2%** (35, 3.8%)	**3, 1.7%** (51, 5.6%)	**1, 0.6%** (41, 4.5%)	**1, 0.6%** (5, 0.5%)	**0**	**0**	**21, 12.1%** (132, 14.5%)
3 TCs	**15, 8.6%** (10, 1.1%)	**4, 2.3%** (20, 2.2%)	**0** (21, 2.3%)	**0** (2, 0.2%)	**0** (2, 0.1%)	**0** (1, 0.1%)	**19, 10.9%** (56, 6.1%)
4 TCs	**13, 7.5%** (5, 0.5%)	**3, 1.7%** (6, 0.7%)	**1, 0.6%** (12, 1.3%)	**0** (2, 0.2%)	**0**	**0**	**17, 9.8%** (25, 2.7%)
5 TCs	**6, 3.4%** (3, 0.3%)	**5, 2.9%** (7, 0.8%)	**0** (6, 0.7%)	**0** (2, 0.2%)	**0**	**0**	**11, 6.3%** (18, 2.0%)
6 TCs	**8, 4.6%** (1, 0.1%)	**3, 1.7%** (1, 0.1%)	**2, 1.1%** (1, 0.1%)	**0**	**0**	**0**	**13, 7.5%** (3, 0.3%)
7 TCs	**4, 2.3%** (1, 0.1%)	**4, 2.3%** (2, 0.2%)	**0** (1, 0.1%)	**1, 0.6%** (1, 0.1%)	**0**	**0**	**9, 5.2%** (5, 0.5%)
8 TCs	**2, 1.1%**	**1, 0.6%**	**0**	**0**	**0**	**0**	**3, 1.7%**
9 TCs	**1, 0.6%**	**3, 1.7%**	**0**	**1, 0.6%**	**0**	**0**	**5, 2.9%**
10 TCs	**0**	**0**	**0**	**0**	**1, 0.6%**	**0**	**1, 0.6%**
11 TCs	**2, 1.1%**	**0**	**0**	**0**	**0**	**0**	**2, 1.1%**
12 TCs	**0**	**0**	**0**	**0**	**0**	**0**	**0**
13 TCs	**0**	**0**	**0**	**0**	**0**	**0**	**0**
14 TCs	**1, 0.6%**	**0**	**0**	**0**	**0**	**0**	**1, 0.6%**
15 TCs	**1, 0.6%**	**0**	**0**	**0**	**1, 0.6%**	**0**	**2, 1.1%**
16 TCs	**1, 0.6%**	**0**	**0**	**0**	**0**	**0**	**1, 0.6%**
17 TCs	**0**	**0**	**0**	**0**	**0**	**0**	**0**
18 TCs	**1, 0.6%**	**0**	**0**	**0**	**0**	**0**	**1, 0.6%**
19 TCs	**1, 0.6%**	**0**	**0**	**0**	**0**	**0**	**1, 0.6%**
20 TCs	**0**	**0**	**0**	**0**	**0**	**0**	**0**
21 TCs	**0**	**0**	**0**	**0**	**0**	**0**	**0**
22 TCs	**0**	**0**	**0**	**0**	**0**	**0**	**0**
23 TCs	**0**	**1, 0.6%**	**0**	**0**	**0**	**0**	**1, 0.6%**
Sum	**114, 65.5%** (397, 43.5%)	**46, 26.4%** (282, 30.9%)	**9, 5.2%** (200, 21.9%)	**3, 1.7%** (28, 3.1%)	**2, 1.1%** (3, 0.3%)	**0** (2, 0.2%)	**174, 100%** (912, 100%)

Table 6-6 Cross-distribution of quantities of trade ceramic and earthenware vessels from two locations of Pila, Laguna (Periods II), SW Luzon (Number in parentheses is data of common inhumations at seven Calatagan sites).

	Without EA	With EA	Sum
Without TC	**8 / 15.7** (285 / 211.1)	**16 / 8.3** (200 / 273.9)	**24, 13.8%** (485, 53.2%)
With TC	**106 / 98.3** (112 / 185.9)	**44 / 51.7** (315 / 241.1)	**150, 86.2%** (427, 46.8%)
Sum	**114, 65.5%** (397, 43.5%)	**60, 34.5%** (515, 56.5%)	**174, 100%** (912, 100%)

Table 6-7 Observed and expected numbers of burials with and without earthenwares across burials with and without trade ceramics at Pila, Laguna (Period II), compared to Calatagan (Numbers stand for observed numbers, without decimal, against expected number, with decimal: O / E. χ^2=12.67>$\chi^2_{1-0.01(1*1)}$=6.63; phi-squared value ϕ^2= 0.073; Yule's Q value Q = -0.66. Number in parentheses is data of common inhumations at seven Calatagan sites. χ^2=97.77>$\chi^2_{1-0.01(1*1)}$=6.63; phi-squared value ϕ^2= 0.107; Yule's Q value Q = 0.60. see Table 5-1).

TRADE CERAMICS AND PROTOHISTORIC CALATAGAN IN MARITIME SOUTHEAST ASIA ca. AD 1500

Since the very beginning, trade ceramics played an essential part in the study of protohistoric Philippines, especially for the dating of sites and revealing possible foreign relationships (Beyer 1979a[1921], 1979b[1948]; Janse 1944; Scott, W. 1984[1968]). During the last four decades, under the influence of the political economic model (Bacus 1995; Hutterer 1973; Junker 1990a, 1999a; Nishimura 1992), trade ceramics have been viewed as vital to the development of social complexity in the Philippines. This approach raises an important issue of how social ranking can be recognized archaeologically through analysis of the distribution of exotic goods, either in regional settlement patterns, intra-site distributions, or variations in mortuary practices. Thus, it is worth returning to the very first question: What do we know of late protohistoric Calatagan society in terms of this thesis' analysis of trade ceramics from mortuary contexts?

Based on early Spanish writings, it is believed that the coastlines of most Philippine major islands were spotted with numerous complex societies. Under the present model of Philippine chiefdoms, the Calatagan sites are considered as representative of such complex societies in the 15^{th} –16^{th} centuries and their archaeological evidence contributes to reconstructing the dynamics of social ranking at that time (Junker 1999a: 41, 175-9, 363) of "more complex social status hierarchies in expanding maritime-trading polities and the wider distribution of foreign trade wealth within previously excluded segments of the population" (ibid: 175). So, was late protohistoric Calatagan society a chiefdom?

Based on the even distribution of trade ceramics, Fox (1959: 345; 1979: 189-90) seriously doubted whether there was a chieftainship class in Calatagan which enjoyed distinct economic advantages. This research, based on the preceding analysis and discussion, reveals that there was no simple dichotomy between trade ceramics and local earthenwares within mortuary practices in late protohistoric Calatagan society. Instead, the use and value of trade ceramics were used in more complicated ways including their relative quantity, imitated forms, association with other grave goods, location in burial layout, and their gradation in different qualities. Moreover, the general pattern shows that both trade ceramics and earthenwares were widely distributed across burials: there is no evidence of a dichotomy between a few "rich" burials with extra quantities of grave goods and a larger number of poor burials. Therefore, although these pieces of evidence suggest that late protohistoric Calatagan society might have had finely graded and complex status hierarchies, as reflected by the distribution of grave goods, it seems difficult to argue that Calatagan was an advanced complex polity such as, for example, Tanjay. This shows a clear dichotomy between rich and poor burials (Junker 1999a: 178), although her argument is based on very few burials (Junker 1999b). The difference between Calatagan and Tanjay requires understanding one possible and essential condition of chiefdom society in the Philippines: an economic-geographic condition for wealth finance – a riverine system.

A key issue in chiefdom studies is how the political economy wealth operates. Wealth finance is one of two vital systems, which are based on various mechanisms of economic control, to support the activities of new governing institutions (Earle 1997: 70-75). According to Earle, wealth finance is "the use of special objects (primitive valuables, prestige goods, or money) as political currencies to compensate people within ruling institutions" (ibid.: 73). Material objects are the means of symbolizing

relationships in the system of wealth finance upon which the ideology of social ranking rests. Exotic objects often become key symbols for the local elite, especially when faraway places are seen as the source of esoteric knowledge (Helms 1988).

For the protohistoric Philippines, trade ceramics can be seen as a perfect example of social currency in wealth finance. Thus, another essential question is how did the Philippine elite regulate social access to trade ceramics in order to retain their value as restricted status objects for social manipulation? For many coastal polities in maritime Southeast Asia, a powerful working model in approaching this complex relationship between competitiveness in foreign trade and regulation in internal mobilization is the so-called 'riverine' model (Bronson 1977). According to Bronson (ibid: 43-4), a polity situated at or near the river mouth of a major drainage basin entails a maritime/coastal/interior exchange network. Such a network is supposed to operate as follows: firstly, geographical conditions restrict the transport of most trade goods via water routes. Secondly, the coastal polity acts as middleman between overseas economically superior polities and inland communities. Finally, the drainage basin of the coastal polities lacks cultivable land, thus, wealth is extracted from trade activities.

This model is commonly applied to many coastal communities of the Malaya Peninsula and insular islands such as Sumatra, Borneo, and the Philippines (e.g. Christie 1990; Hall, K. 1985; Junker 1990a; Leong 1990). However, since this model operates under certain geographical conditions, it does not seem suitable for Calatagan: there is no resource-rich inland which requires access by rivers for the coastal community. There might have been more than 150 square kilometres inland[3] for the Tanjay polity,

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[3] The Bais Anthropological Project is about 315 km², but includes seven catchment areas. Tanjay river is the largest one, but not totally covered by the Bais project. I estimate the catchment area of Tanjay river

but Calatagan might only have had approximately 12 square kilometres[4] with many small brooks and no large river.

Calatagan seems to have been a tiny, resource-poor peninsula which did not operate its economy in the same way as those polities with rivers and access to interior forests. However, as far as we can tell, Calatagan is at least a similar, if not a more impressive area, to anything thus far uncovered in many parts of the Philippines. If the riverine model of complex society is not suitable, one alternative is, perhaps, that Calatagan's political-economy was based on trans-shipping trade-exotic goods elsewhere. This possibility raises another question with regard to late protohistoric Calatagan society: why were these coastal communities located there?

Is it possible that the Calatagan sites were just some peripheral communities belonging to a regionally powerful nearby chiefdom? The present archaeological evidence cannot answer this question, since the nearest known powerful polity was Manila which was more than 100 kilometres away. However, the richness of trade ceramics, as well as earthenwares and many other grave goods, suggests that Calatagan sites were not economically peripheral communities with limited access to foreign goods nor were they receiving prestige goods as gifts from higher-ranking elites elsewhere.

Moreover, a geographical question is always also a historical one; a further question which can be asked is: why were these sites located at Calatagan during this particular period of time? Up until now, more than 20 sites have been discovered over

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covered by the project is about half of Bais area.

[4] In administration, the whole municipality of Calatagan is about 112 km^2. However, the west strip of this large Calatagan Peninsula, where these sites are located, is quite small: 2 km x 5.5 km.

this small peninsula. There is still no clear archaeological picture of the forerunner of these late protohistoric Calatagan people. The latest discovery reveals that there existed a Late Neolithic, Pre-porcelain Period (about the first millennium AD) in Calatagan (Bautista 1995; de la Torre 1996).[5] However, the present evidence suggests there was a long gap between these two periods, and thus it is difficult to assume that these Neolithic people could be the predecessors of the later protohistoric communities. Also, the present settlers are not the offspring of the protohistoric people. According to local history (Bautista 1995; Fox 1959: 338), modern settlers first migrated to this area, only in the late 19th century, mainly due to sugar plantations.

The present evidence points towards the unusual circumstance that these protohistoric Calatagan people suddenly arrived on this tiny peninsula, established their communities along the coast, stayed for no more than two centuries and then departed. This brief existence also bothered Fox. He proposed the possibility that the Calatagan sites might have developed in the very late pre-Hispanic period by intrusive people from the southern or central Philippines (Fox 1959: 363). Is it, therefore, possible that these late protohistoric Calatagan settlements were immigrant communities established for a relatively short period of time? If so, what factor/s drove people to settle there in this specific period?

What we encountered at Calatagan might be better comprehended when placed within the wider context of maritime Southeast Asia, ca. 1500 AD. The geographical importance of the Calatagan Peninsula, southwest Luzon and the nearby islands in general, within the Southeast Asian maritime trade system, might be its location between China, one of the largest markets and production systems in the pre-modern

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[5] The earlier Neolithic sites are along the east coast, but later protohistoric sites are on the west.

world, and the Moluccas Islands, the source of many precious spices. Actually, the importance of this area is documented clearly in the sixteenth-century Spanish descriptions that Chinese and other Asian vessels regularly appeared in these waters (e.g. Anonymous 1903b[1570]: 76). No matter which maritime trade route was taken, southwest Luzon, and the Calatagan Peninsula in particular, was strategically located between China, Luzon, the other central Philippine Islands and the more distant destinations (see Figure 3-2).

Timing is also an important factor here. Even though Ming China's official voyage, the famous Zheng He's fleet, ended in 1433, and private maritime trade was forbidden by Ming authorities throughout the fifteenth century, private Chinese merchants continued to sail to this insular island world. Roderich Ptak's sophisticated discussion (1992; 1998) reveals that "the eastern route to the Southeast Asia", from the viewpoint of ancient Chinese merchants, or "the northern route to the Spice Islands" in terms of the destination toward the Moluccas, reached its peak in the fifteenth century. The fifteenth and sixteenth centuries, as Anthony Reid (1993: 1) singles out, is "The Age of Commerce" in Southeast Asia. The trade boom did not only affect Europe, Arabia, India and China, but Island Southeast Asia also played a particularly critical role for supplying many special natural resources and products.

Under such a rich environment of maritime trade activities, it seems there was a strong, external incentive attracting people to this "poor" piece of land during the late protohistoric period. In the future, biological anthropological evidence might help determine whether these Calatagan people were locals or immigrants. However, in this island world, the movement of people among islands and coasts happened often, since very early times. This kind of cultural phenomenon clearly reflects on a key word in

Tagalog: *Barangay*, which means a group of mobile and localized people highly dependant on boats (Scott, W. 1994: 4-6; also see detailed discussion in Chapter Three). Unfortunately, we have very little settlement information and no ecological data from the past archaeological excavations; thus, we can currently say little about how they survived there, which is an essential question for further research in Calatagan.

CHAPTER SEVEN
CONCLUSION

The movement of high-fired glazed trade ceramics, first from China then from Vietnam, Thailand, Cambodia, Burma, and even Japan and, later, Korea, is one of the striking features of pre-modern, long distance maritime trade activity in the South China Sea as reflected in the archaeological record since the end of the first millennium CE. The Philippine Islands, as a peripheral archipelago in Southeast Asia where pre-modern written records are scarce, had neither a tradition of high-fired ceramics nor glazing techniques. Trade ceramics provide a persistent and pervasive indicator of the inter-regional long distance cultural contacts of the ancient Filipinos. More than an important indicator of cultural contact, trade ceramics are assumed to have been of cultural significance in Philippine society, transcending considerations of utility; thus, they were highly precious possessions of wealth, status, ritual practice, etc. Their importance in the protohistoric Philippines is indicated by their widespread distribution. The popularity of trade ceramics raises an essential question: *why and how did trade ceramics become desirable and accessible in the protohistoric Philippines?* However, the interpretations offered of the role that trade ceramics played within the local cultural context are still barely investigated and are hotly disputed.

This research focuses on one specific issue of consumption behaviour of trade ceramics: *how trade ceramics were treated, in what pattern was the social value set upon in the mortuary context of protohistoric southwest Luzon?* The theoretical discussion in Chapter Two reveals that the value of things is not frozen in their material properties during the production process. The value of material objects could be, ultimately, a form of human consciousness mutually defined to clarify the reproductive relationships of things and people, as well as to guide the actions taken to create a

desired order. Moreover, a value system is not universally applicable and is only effective in a specific socio-cultural setting. Mortuary practice is a specific setting which materializes and objectifies the social value of grave goods, and which is mutually defined in terms of social relationships between the dead and the mourner, as well as the value hierarchy of items used as grave goods. Many previous studies have assumed that trade ceramics only represented prestige goods, in which they are treated either as categorically distinct from other objects (e.g. earthenwares), or as an undifferentiated group of grave goods. This research moves beyond simple dichotomies and instead investigates the diverse use pattern of trade ceramics vis-à-vis local earthenwares within the mortuary contexts of seven cemeteries in Calatagan, southwest Luzon, dating between the mid-15th and mid-16th centuries AD.

The idea of trade ceramics as a prestige good, superior in social status to local earthenwares, is based on particular assumptions, which this research investigates as a series of five essential hypothesised relationships: quantity, association, location, gradation, and imitation. It also investigates five other variables: age, tooth-filing, orientation, sites, and uncommon headless burials. The results of the quantitative analyses suggest there were no simple, clear dichotomies between trade ceramics and local earthenwares, nor with trade ceramics having had superior status to local earthenwares. The use and value of pottery vessels were manipulated in more complicated ways.

In summary, for the majority of common inhumations, there was a positive relationship between trade ceramics and local earthenwares: burials with trade ceramics were also likely to have one or two earthenwares. In terms of the association relationship, the results are divergent. There was no clear indication that trade ceramics

and earthenwares were significantly different in their distributions in burials containing specific goods (metal tool, clay spindle whorl, and glass adornment) or with different pottery vessels. However, the significant difference between few and more trade ceramics might suggest that burials with metal tools had more trade ceramics. The other three hypothesised relationships all exposed significant differences between trade ceramics and earthenwares in their spatial uses. The most important point derived from these analyses is that neither trade ceramics nor earthenwares were a single, coherent category of grave good. Even though this research cannot propose a hierarchy of pottery vessels, there existed a significant correlation between certain forms of pottery vessels and specific body positions.

This research represents an initial step toward understanding the social use and value system of trade ceramics in protohistoric Philippine society and culture. What can be learned from this quantitative analysis is that studies need to move beyond simple dichotomies between trade ceramics and local earthenwares and look, instead, into their uses in specific contexts. It is clear that more research is needed toward this target, either through the re-analysis of museum collections or through further fieldwork.

Since the mid-1970s, two other major subjects of trade ceramic study, production and circulation, have made significant progress in Southeast Asia and South China. Thanks to the advances of maritime archaeology, more and more shipwrecks are being discovered in the waters of the South China Sea, and many are under systematic excavation (Dizon 2003; see R. M. Brown 2004 for the latest survey of maritime archaeology in Southeast Asia). Patterns of quantity, quality, and provenance of circulated trade ceramics, as well as the people and organization involved, within this maritime trade network during late first millennium EC and mid-second millennium

have become clearer. Archaeological discoveries of kiln sites in South China and Mainland Southeast Asia during the past two decades, the result of economic development and the awareness of cultural heritage have contributed much to our knowledge of pottery production in these areas (Ho 1990). Archaeologists and pottery experts are now more confident in identifying the provenances of trade ceramics found in Island Southeast Asia, as well as reconstructing the technological development and social organization involved in pottery production in Mainland Southeast and South China. In comparison, our understanding of the consumption end of trade ceramics is still vague, especially for pre-modern maritime trade and pre-state societies in Insular Southeast Asia (Miksic 2000; O'Connor 1983).

FURTHER RESEARCH

Based on the results of this research, I propose two further areas of research: 1) museum collection study, and 2) fieldwork.

Museum collection study

One vital lesson learnt from this research is the value of museum collections. Through serious re-analysis, they can contribute to our understanding of the past and provide directions for further studies. Museum collections have a close relationship with the development of archaeological study since the beginning of this discipline in the nineteenth century (Daniel 1975: 38-54), and have become more important in the past three decades (Pearce 1990). This thesis is based on original field records kept in the National Museum of the Philippines. Even though intensive data collecting was conducted for this research, it is still hoped that "new" evidence will emerge from further investigation, not only from the National Museum of the Philippines but also from other institutions and other collections. The following two directions are especially

worthy of further research:

For the question raised in the section on the comparative study of two nearby sites, Santa Ana, Manila, and Pila, Laguna, the original records might be kept by the Locsin family in Manila (Locsin and Locsin 1967; Tenazas 1968). Also, the material from the first excavation in Calatagan, which was conducted by Olov Janse, might be in the Peabody Museum of Harvard University (Tawara 2005: 140). Re-analysis based on those original records will provide the most similar materials to this research.

In addition to accessing other possible records, it is also important to re-assess the artefacts unearthed. This research did not examine those materials because of the inaccessibility of the collection. Fox mentioned that he returned most of the pottery vessels, especially the trade ceramics, to local people after excavation. Therefore, we know he at least kept many of the earthenwares for later analysis (Main and Fox 1982) and some other trade ceramics.[1] It will be very helpful, particularly for the dating and physical properties of pottery vessels, to access and re-analyse these objects.

Fieldwork

Fox and his team worked in Calatagan during the late 1950s and early 1960s. Since then, there have been only a few random field trips conducted in this area, and most were along the east coast. Calatagan is definitely a vital spot for Philippine protohistory, not only for the regional history of southwest Luzon, but also for a broader picture of maritime trade. Thus, I propose the following fieldwork focus on the questions raised in the preceding sections.

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[1] In the Record Section of the National Museum of the Philippines, I found some diagnosed records of trade ceramics done by a Japanese scholar.

The first task is a systematic survey to reveal the distribution of sites, locate their ecological niches and estimate their size. All the present sites are along the coast; Fox focused on the west side and later surveys by the National Museum paid attention to the east side, thus leaving blank, in terms of archaeological knowledge, the two kilometres inland. The geographical distribution of sites exposes not only the history of human occupation in this peninsula, but also closely relates to how humans survived in such an environment.

The secondary mission must be to clarify the nature of the site. These Calatagan sites are known and treated as cemeteries. According to ethnohistoric and ethnographic information, ancient Tagalogs practiced burial inside their houses or in nearby graveyards. Fox also did not exclude the possibility that the Calatagan sites were for both burial and for living. More test excavations are thus needed to explore everyday Tagolog life.

FINAL NOTE

In the beginning of Chapter One, I quote Susan Sherratt (1999: 163-4) on her observation of comparable issues in ancient Mediterranean pottery trade, to highlight the importance of a sophisticated contextual study for trade ceramics in Southeast Asia. In this final note, now, it is still worth recalling her words, which I re-write as follows:

> **Were trade ceramics really an important item of inter-regional exchange, which held superior-status in local material culture? Or are we Southeast Asian archaeologists simply misled by its prominence in the surviving material remains? If it was not an especially important item, why did it apparently move in such quantities? To ask why it should have done so is to raise fundamental questions about the nature of pre-modern long distance maritime trade in Southeast Asia, about the concepts of value which we apply to exotic goods, and the motivations for their transfer between producers and consumers.** (Adapted from Susan Sherratt 1999: 163-4)

Appendices

Notes for Appendix 1-7:
Explanation of abbreviations in summary of mortuary database in Calatagan

Burial-No.

Coding for each interment. Number missing because there is no original record, or there is no data available, for this number.

Type

Coding for interment types.

"**Common**" for common inhumation;

"**Prone**" for prone position inhumation;

"**Semi-flexed**" for semi-flexed position inhumation;

"**Headless**" for headless inhumation including both "head-taking" and "head-missing";

"**Skull-only**" for interment contained skull only but without any other skeleton;

"**Multiple**" for those contained more than one individual inside one pit, which could be many kinds of combinations;

"**Jar burial**" for the skeleton contained inside a burial jar;

"**Non-skeleton**" for those without trace of bone but contained only artefacts (normally earthenware or trade ceramic vessels);

"**Disturbed**" for the interment that the skeleton was clearly disturbed by previous activity, especially by later interment;

"**Bundle**" as a special kind of disturbed interment stands for the skeleton was collected together, especially the limbs and girdle bones;

"**Looted**" for the burial clearly disturbed by looting activity, taking the grave goods only and destroyed the burial.

Burials marked "Disturbed" and "Looted" are not included in my analysis, except those were "multiple" graves as well.

Burials with more than one type marks stand for their special condition, which is in order to provide more information. For example, "Multiple/Common" means the individual is like a common inhumation but interred with other burial inside the same pit. However, in chapter discussion, I will treat them in one category only.

Orientation

Coding for the direction where the skeleton headed.

"**N**" for the north (337.5° to 22.5°);

"**NE**" for the northeast (22.5° to 67.5°);

"**E**" for the east (67.5° to 112.5°);

"**SE**" for the southeast (112.5° to 157.5°);

"**S**" for the south (157.5° to 202.5°);

"**SW**" for the southwest (202.5° to 247.5°);

"**W**" for the west (247.5° to 292.5°);

"**NW**" for the northwest (292.5° to 337.5°); and

"**NA**" for no information available.

Degree in parentheses is the exact degree. In addition, orientation for jar burial stands for the direction of the mouth of burial jar. The direction of skeleton inside burial jar, if available, is provided in the Note column. (*orientation for jar burial means the direction of the mouth of burial jar)

Age

Coding for the age of the skeleton.

"**A**" for adult (17 and plus years old);

"**J**" for juvenile (11-16 years old);

"**C**" for child (3-10 year olds);

"**I**" for infant.

If available, the information of young adult ("**Y**" in parentheses, about 17 to 30 years old) or old one ("**O**" in parentheses, about over 50s), or even the accurate age (number in parentheses), will be provided.

Sex

Coding for the sex of the skeleton.

"**F**" for female;

"**M**" for male;

"**NA**" for no data available.

Tooth-filing

Coding for the tooth-filing information of the skeleton.

"**Y**" for those with tooth-filing.

"**N**" for those without tooth-filing.

"**NA**" for no data available.

Number and letter in parentheses stand for the tooth-filing pattern. Number for the total teeth filed at upper or lower jaw, or "**?**" for those with data. "**U**" for upper jaw. "**L**" for low jaw. For example, "6U6L" stands for there were six upper teeth and six low teeth filed.

EA

Coding for the number of earthenware vessels in this burial.

TC

Coding for the number of trade ceramic vessels in this burial.

MS

Coding for the number of miscellaneous grave goods in this burial.

GG

Coding for the total number of grave goods (EA, TC and MS) in this burial.

Notes

More information about this burial, including skeleton condition as well as type and location of the grave goods. Information about grave goods includes four parts: The first is the coding of grave goods which is the Burial-No. and adding letter after (e.g. KT-0001-a); the second part is the type of grave goods which can be found in detail in Appendix 8 to Appendix 10 (e.g. T112 is a Chinese Blue-and-white plate); the third part refers to the location of grave goods which is tabled below (or refer to Figure 4-2 in Chapter Four); the last part inside parentheses is a brief explanation about the item.

"1" Area behind the skull.

"2" Area on the right side of the skull.

"3" Area on the left side of the skull.

"4" Right upper arm (humerus) and its right side.

"5" Left upper arm (humerus) and its left side.

"6" Right elbow.

"7" Left elbow.

"8" Right lower arm (radius and ulna) and its right side.

"9" Left lower arm (radius and ulna) and its left side.

"10" Right hand (carpals, metacarpals, and phalanges).

"11" Left palm (carpals, metacarpals, and phalanges).

"12" Right upper leg (femur) and its right side.

"13" Left upper (femur) and its left side.

"14" Right knee (patella).

"15" Left knee (patella).

"16" Right lower leg (tibia and fibula) and its right side.

"17" Left lower leg (tibia and fibula) and its left side.

"18" Right foot (tarsals, metatarsals, and phalanges).

"19" Left foot (tarsals, metatarsals, and phalanges).

"20" Area on the right side of right foot.

"21" Area on the left side of left foot

"22" Area in frond of two feet

"33" Area between two feet.

"44" Area between two lower legs.

"55" Area between two knees.

"66" Area between two upper legs.

"77" Pelvic girdle area.

"88" Lumbar area.

"99" Chest/Shoulder girdle area.

"100" Skull.

Appendix One

Appendix 1: Summary of mortuary database of Kay Tomas, Calatagan

Burial-No.	Type	Orientation	Age	Sex	Tooth-filing	EA	TC	MS	GG	Notes
KT-0001	Common	S	J (10-15)	NA	NA	1	0	0	1	KT-0001-a: E801-NA.
KT-0002	Common	S (160°)	NA	NA	NA	1	6	0	7	KT-0002-a: T900-19 (TC unknown); KT-0002-b: T119-17 (Chinese BW cup); KT-0002-c: T112-77 (Chinese BW plate); KT-0002-d: T902-44 (plate); KT-0002-e: T905-3 (small jarlet); KT-0002-f: T902-1 (plate); KT-0002-g: E111-22 (KT-s-A).
KT-0003	Common	SE (155°)	A	NA	Y	1	3	1	5	KT-0003, 4, and 5 were buried very close. KT-0003-a: T905-1 (small jarlet); KT-0003-b: T901-3 (porcelain bowl); KT-0003-c: T112-21 (Chinese BW plate); KT-0003-d: E111-2 (KT-s-A); KT-0003-e: M217-NA (iron slag).
KT-0004	Headless	SE (155°)	A	NA	NA	3	1	2	6	KT-0003, 4, and 5 were buried very close. One stone beside the position of head. KT-0004-a: E800-9; KT-0004-b: E800-44; KT-0004-c: T130-44 (Chinese monochrome, as cover of 0004-b); KT-0004-d: E800-20; KT-0004-e: M219-21 (iron plate); KT-0004-f: M510-3 (a stone beside head).
KT-0005	Skull-only	NA	NA	NA	NA	0	0	0	0	KT-0003, 4, and 5 were buried very close.
KT-0006	Common	SE (155°)	A	M	N	1	1	2	4	KT-0006-a: T111-1 (Chinese BW bowl); KT-0006-b: E111-1 (KT-s-A); KT-0006-c: M430-88 (a kima shell at tomy); KT-0006-d: M430-1 (a kima shell behind head).

KT-0007	Common	SE (155°)	A	NA	NA	2	2	1	5	KT-0007-a: T205-1 (Thai jarlet); KT-0007-b: E800-3 (earthenware); KT-0007-c: T110-3 (Chinese BW); KT-0007-d: E113-19 (KTsp-C); KT-0007-e: M510-1 (a stone behind head).
KT-0008	Common	NA	J (10-15)	F	N	1	1	2	4	KT-0008-a: T112-4 (Chinese BW plate); KT-0008-b: M111-5 (spindle whorl); KT-0008-c: E111-17 (KT-s-A); KT-0008-d: M301-8 (glass bracelet on right wrist).
KT-0009	Common	N (340°)	A	NA	NA	1	2	0	3	KT-0009-a: T205-2 (Thai jarlet); KT-0009-b: T111-2 (Chinese BW bowl); KT-0009-c: E111-1 (KT-s-A).
KT-0010	Common	SE (145°)	A	NA	NA	0	1	0	1	KT-0010-a: T200-NA (Thai ware).
KT-0011	Common	NA	A (old)	NA	N	0	0	0	0	
KT-0012	Common	S (170°)	A (O))	NA	NA	2	5	2	9	KT-0012-a: T112-55 (Chinese BW-hb plate); KT-0012-b: T112-77 (Chinese BW plate); KT-0012-c: M111-99 (spindle whorl); KT-0012-d: T112-100 (Chinese BW plate); KT-0012-e: E113-1 (KT-s-C); KT-0012-f: T131-1 (Chinese Green ware bowl); KT-0012-g: E111-33 (KT-s-A); KT-0012-h: M512-1 (portion of worked stone implement); KT-0012-i: T119-77 (Chinese BW dish).
KT-0013	Common	NA	C	NA	N	0	2	0	2	KT-0013-a: T111-NA (Chinese BW bowl); KT-0013-b: T119-NA (Chinese BW dish).
KT-0014	Common	NA	A	NA	NA	3	1	0	4	Skull seems not at the right position. KT-0014-a: T900-19 (type unknown); KT-0014-b: E800-21; KT-0014-c: E800-22; KT-0014-d: E800-33.

KT-0015	Common	NA	J	NA	N	2	1	0	3	KT-0015-a: T205-13 (Thai jarlet); KT-0015-b: E113-22 (KT-s-C); KT-0015-c: E121-1 (KT-p-A).
KT-0016	Common	SE (135°)	A	NA	NA	2	2	0	4	KT-0016-a: T112-77 (Chinese BW plate, kylin mark); KT-0016-b: T205-1 (Thai jarlet); KT-0016-c: E111-1 (KT-s-A); KT-0016-d: E112-1 (KTsp-B).
KT-0017	Common	SE (145°)	A	NA	NA	1	4	0	5	KT-0017-a: T101-66 (Chinese bowl); KT-0017-b: T101-99 (Chinese bowl); KT-0017-c: T119-3 (Chinese BW vase); KT-0017-d: T132-99 (Chinese mono plate); KT-0017-e: E111-16 (KT-s-A).
KT-0018	Headless	SE (135°)	A	NA	NA	1	1	0	2	KT-0018-a: T111-NA (Chinese BW bowl); KT-0018-b: E111-NA (KT-s-A).
KT-0019	Common	NA	NA	NA	NA	1	3	0	4	KT-0019-a: E111-NA (KT-s-A); KT-0019-b, c, & d: T900-NA (type unknown).
KT-0020	Common	S (180°)	A	NA	NA	2	2	2	6	KT-0020-a: E113-3 (KT-s-C); KT-0020-b: T111-4 (Chinese BW bowl); KT-0020-c: T111-77 (Chinese BW bowl); KT-0020-d: M111-66 (spindle whorl); KT-0020-e: E800-13 (earthenware); KT-0020-f: M430-16 (a large shell at right low leg).
KT-0021	Common	SE (150°)	C	NA	N	1	1	0	2	KT-0021-a: T110-1 (Chinese BW); KT-0021-b: E111-21 (KT-s-A).
KT-0022	Common	S (165°)	A	F	N	1	2	2	5	KT-0022-a: T901-77 (bowl); KT-0022-b: T902-11 (plate); KT-0022-c: E111-16 (KT-s-A); KT-0022-d: M510-1 (a stone behind head); KT-0022-e: M430-3 (a shell beside head).
KT-0024	Common	NA	C	NA	N	0	1	0	1	KT-0024-a: T111-NA (Chinese BW bowl).

KT-0025	Common	SE (115°)	A	NA	NA	1	3	1	5	KT-0025-a: T901-15 (bowl); KT-0025-b: T905-66 (jarlet); KT-0025-c: T901-17 (bowl); KT-0025-d: E113-21 (KT-s-C); KT-0025-e: M510-20 (a stone at right foot).
KT-0026	Common	S (180°)	A	NA	Y	1	7	5	13	KT-0026-a: T144-1 (Chinese stoneware jar); KT-0026-b: T101-1 (Chinese small bowl as cover of c); KT-0026-c: E111-1 (KT-s-A); KT-0026-d: T102-77 (Chinese large plate); KT-0026-e: T101-11 (Chinese small bowl); KT-0026-f: M209-22 (metal plate); KT-0026-g: T204-22 (Thai jar cover of 26-I); KT-0026-h: M420-22 (a stingray spike); KT-0026-i: T204-22 (Thai jar); KT-0026-j: M519-2 (a stone object); KT-0026-k: T905-22 (small jarlet); KT-0026-l: M900-16 (unknown object); KT-0026-m: M410-NA (animal bones).
KT-0027	Common	SE (150°)	A	NA	Y	3	1	1	5	KT-0026-a: E112-1 (KT-s-B); KT-0026-b: M249-100 (3 gold plog in tooth); KT-0026-c: E111-1 (KT-s-A); KT-0026-d: T112-77 (Chinese BW plate); KT-0026-e: E221-16 (PB-p-A).
KT-0028	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. KT-0028-a: E113-NA (KT-s-C).
KT-0029	Skull-only	NA	NA	NA	NA	1	1	0	2	KT-0027-a: T205-NA (Thai jarlet); KT-0027-b: E112-NA (KT-s-B).
KT-0030	Non-skeleton	NA	NA	NA	NA	0	3	0	3	There is no bone found. KT-0030-a, b & c: T200-NA (Thai wares).
KT-0031	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. KT-0031-a: E111-NA (KT-s-A).

KT-0032	Common	SE (150°)	J (5-10)	NA	NA	1	1	0	2	KT-0032-a: E110-1 (KT-s-B or C); KT-0032-b: T200-14 (Thai ware).
KT-0033	Common	SE (150°)	A	NA	NA	1	1	0	2	KT-0033-a: T205-1 (Thai jarlet); KT-0033-b: E800-17 (unknown type).
KT-0035	Common	NA	I	NA	N	1	2	0	3	KT-0035-a: E114-NA (KTsp-D1a); KT-0035-b: T204-NA (small jar); KT-0035-c: T903-NA (saucer, as cover for 0035-b).
KT-0036	Common	S (165°)	J	NA	N	3	0	1	4	This burial is very near to KT-0040. KT-0036-a: E800-2 (unknown type); KT-0036-b: E112-NA (KT-s-B); KT-0036-c: E800-4 (unknown type); KT-0036-d: M111-11 (spindle whorl).
KT-0037	Common	SE (155°)	J	NA	NA	3	0	2	5	KT-0037-a: E112-1 (KT-s-B); KT-0037-b: E111-8 (KT-s-A); KT-0037-c: M111-8 (spindle whorl); KT-0037-d: E801-12 (ordinary type); KT-0037-e: M510-8 (a stone above 0037-b).
KT-0038	Common	SE (155°)	J (5-10)	NA	NA	3	1	1	5	KT-0038-a: T111-16 (Chinese BW bowl); KT-0038-b: E112-16 (KT-s-B); KT-0038-c: M210-13 (iron item); KT-0038-d: E800-21 (unknown type); KT-0038-e: E800-22 (unknown type).
KT-0039	Common	S (165°)	A	NA	NA	1	0	0	1	KT-0039-a: E134-16 (KT-i-D).
KT-0040	Common	N (350°)	A	NA	N	2	0	0	2	This burial is close to KT-0036. KT-0040-a: E111-1 (KT-s-A); KT-0040-b: E112-1 (KT-s-B).
KT-0041	Common	NE (55°)	A	NA	NA	0	0	0	0	
KT-0042	Common	S (170°)	A	NA	Y	0	0	0	0	KT-0042 is above KT-0043.

KT-0043	Common	E (105°)	A	NA	Y	0	0	0	0	KT-0043 is under KT-0042.
KT-0044	Common	SE (150°)	A	NA	Y	1	0	0	1	KT-0044, 45, 46 were buried very close. KT-0044-a: E800-88 (unknown type).
KT-0045	Skull-only	NA	NA	NA	NA	0	0	0	0	KT-0044, 45, 46 were buried very close.
KT-0046	Common	SE (150°)	A	NA	NA	1	0	0	1	KT-0044, 45, 46 were buried very close. KT-0046-a: E800-1 (unknown type).
KT-0047	Common	NA	NA	NA	N	0	0	0	0	
KT-0048	Common	NA	C	NA	N	2	1	0	3	KT-0048-a: E113-NA (KT-s-C); KT-0048-b: T204-NA (Thai small jar); KT-0048-c: E111-NA (KT-s-A).
KT-0049	Semi-flexed	S (180°)	C (2-4)	NA	N	1	0	0	1	The skull faced left (i.e. the west). KT-0049-a: E800-20 (unknown type).
KT-1001	Common	SE (155°)	A	NA	NA	1	3	0	4	KT-1001-a: T204-1 (Thai small jar); KT-1001-b: T112-77 (Chinese BW plate); KT-1001-c: T112-33 (Chinese BW plate); KT-1001-d: E111-33 (KT-s-A)(inverted on 1001-c).
KT-1002	Common	SE (150°)	A	NA	NA	2	0	0	2	KT-1002-a: E800-3 (unknown type); KT-1002-b: E800-17 (unknown type).
KT-1003	Common	S (160°)	A	NA	Y	1	3	2	6	KT-1003 is next to KT-1004. KT-1003-a: T115-1 (Chinese BW jarlet); KT-1003-b: T112-3 (Chinese BW plate); KT-1003-c: M111-5 (spindle whorl); KT-1003-d: T112-77 (Chinese BW plate); KT-1003-e: M900-66 (unknown item); KT-1003-f: E800-22 (unknown type).

KT-1004	Common	N (340°)	C	NA	N	2	1	1	4	KT-1004 is next to KT-1003 and 1005. KT-1004-a: E111-22 (KT-s-A); KT-1004-b: M302-17 (glass anklet on left); KT-1004-c: T205-1 (Thai small jarlet); KT-1004-d: E112-1 (KT-s-B).
KT-1005	Common	NW (335°)	A	NA	Y	2	0	1	3	KT-1005 is next to KT-1004. KT-1005-a: E800-1 (unknown type); KT-1005-b: M111-3 (spindle whorl); KT-1005-c: E800-22 (unknown type).
KT-1006	Common	NW (335°)	A	NA	Y	2	0	0	2	KT-1006-a: E111-1 (KT-s-A); KT-1006-b: E800-21 (unknown type).
KT-1007	Common	NA	C	NA	N	0	0	0	0	
KT-1008	Common	SE (155°)	A	NA	Y	1	0	0	1	KT-1008-a: E111-22 (KT-s-A).
KT-1009	Common	S (165°)	A	NA	Y	1	3	0	4	KT-1009-a: T112-77 (Chinese BW big plate); KT-1009-b: E111-16 (KT-s-A); KT-1009-c: T111-20 (Chinese BW bowl); KT-1009-d: T113-20 (Chinese BW small saucer).
KT-1010	Common	NW (330°)	C	NA	N	0	0	0	0	
KT-1011	Common	SE (150°)	A	NA	Y (6U6L)	2	1	1	4	KT-1011 is next and opposite to KT-1012. KT-1011-a: E112-1 (KT-s-B); KT-1011-b: T123-77 (Chinese WW saucer); KT-1011-c: E800-20 (unknown type); KT-1011-d: M512-20 (stone axe).
KT-1012	Common	NW (330°)	A	NA	Y	0	0	0	0	KT-1012 is next and opposite to KT-1011.
KT-1013	Common	SE (140°)	A	NA	Y (?U4L)	0	0	0	0	

KT-1014	Common	S (180°)	A	NA	NA	2	2	0	4	KT-1014-a: T111-1 (Chinese BW bowl, cover of 1014-b); KT-1014-b & c: E800-1 (unknown type); KT-1014-d: T111-1 (Chinese BW bowl, cover of 1014-c)-1.
KT-1015	Common	S (160°)	C (7-10)	NA	N	3	3	0	6	KT-1015-a: T130-4 (Chinese blue ware); KT-1015-b: T113-66 (Chinese BW saucer); KT-1015-c: E113-66 (KT-s-C); KT-1015-d: E111-17 (KT-s-A); KT-1015-e: T111-22 (Chinese BW bowl); KT-1015-f: E113-22 (KT-s-C).
KT-1016	Common	SE (155°)	J (10-15)	NA	N	1	1	3	5	KT-1016-a: M307-99 (glass slag); KT-1016-b: E111-5 (KT-s-A); KT-1016-c: T304-14 (Vietnamese small jar); KT-1016-d: M111-17 (spindle whorl); KT-1016-e: M410-21 (deer bone).
KT-1017	Common	S (160°)	A	NA	N	2	2	1	5	KT-1017-a: T901-1 (bowl); KT-1017-b: E800-1 (unknown type); KT-1017-c: T204-2 (small jar); KT-1017-d: M209-17 (metal nail-like tool); KT-1017-e: E111-22 (KT-s-A).
KT-1018	Common	SE (155°)	A	NA	N	3	2	0	5	KT-1018-a: T901-3 (bowl); KT-1018-b: T204-2 (small jar); KT-1018-c: E111-77 (KT-s-A); KT-1018-d: E112-44 (KT-s-B); KT-1018-e: E800-22 (unknown type).
KT-1019	Non-skeleton	NA	NA	NA	NA	1	1	0	2	There is no bone found. KT-1019-a: T113-NA (Chinese BW-hb saucer); KT-1019-b: E800-NA (unknown type).
KT-1020	Common	S (160°)	A	NA	Y (9U6L)	2	3	0	5	KT-1020-a: T200-1 (Thai ware); KT-1020-b: E800-1 (unknown type); KT-1020-c: E800-22 (unknown type); KT-1020-d: T111-22 (Chinese BW bowl); KT-1020-e: T113-22 (Chinese BW-hb saucer).

KT-1021	Common	S (160°)	A (25-30)	NA	Y (8U6L)	1	1	3	5	KT-1021-a: T119-3 (Chinese BW ewer); KT-1021-b: E800 –8 (unknown type); KT-1021-c: M205-12 (metal spear); KT-1021-d: M430-66 (large shell); KT-1021-e: M110-NA (unknown clay item).
KT-1022	Common	S (160°)	A	NA	Y	2	2	0	4	KT-1022-a: E800-3 (unknown type); KT-1022-b: T112-66 (Chinese BW big plate); KT-1022-c: E800-44 (unknown type); KT-1022-d: T205-18 (Thai jarlet).
KT-1023	Jar burial	NA	I	NA	N	0	2	0	2	KT-1023-jar: T144 (Chinese stoneware as burial jar); KT-1023-a: T111 (Chinese BW bowl as jar cover); KT-1023-b: T205 (Thai jarlet).
KT-1024	Headless	S (145°)	A	NA	NA	2	2	3	7	The atlas bone present but skull absent. KT-1024-a: E800-3 (unknown type); KT-1024-b: T111-77 (Chinese BW bowl); KT-1024-c: M410-13 (animal bone); KT-1024-d: T112-22 (Chinese BW plate); KT-1024-e: E134-22 (earthenware with 2 handles and 2 drops)-22; KT-1024-f: M519-NA (unknown white stone object); KT-1024-g: M410-NA (2 molars).
KT-1025	Common	S (160°)	C (4-8)	NA	N	2	0	0	2	KT-1025-a: E111-2 (KT-s-A); KT-1025-b: E111-66 (KT-s-A).
KT-1026	Headless	SE (150°)	A	NA	NA	2	1	1	4	KT-1026-a: E112-2 (KT-s-B); KT-1026-b: E800-4 (unknown type); KT-1026-c: T205-8 (Thai small jarlet); KT-1026-d: M111-12 (spindle whorl).
KT-1027	Common	NE (65°)	A (19-23)	M	Y	2	0	4	6	KT-1027-a: E112-1 (KT-s-B); KT-1027-b: E113-1 (KT-s-C); KT-1027-c: M229-1 (brass wire); KT-1027-d: M215-3 (short iron blade); KT-1027-e: M215-100 (long iron blade); KT-1027-f: M512-13 (stone tool).

KT-1028	Common	N (340°)	C	NA	N	2	2	0	4	KT-1028-a: T164-1 (Chinese over-glazed small jar); KT-1028-b: T111-1 (Chinese BW bowl); KT-1028-c: E800-22 (unknown type); KT-1028-d: E800-88 (unknown type).
KT-1029	Common	NW (330°)	C (5-8)	NA	N	2	3	0	5	KT-1029-a: T111-1 (Chinese BW bowl); KT-1029-b: E111-1 (KT-s-A); KT-1029-c: T304-44 (Vietnamese small jar); KT-1029-d: T112-22 (Chinese BW plate); KT-1029-e: E111-22 (KT-s-A).
KT-1030	Common	N (350°)	C	NA	N	2	2	0	4	KT-1030-a: E112-1 (KT-s-B); KT-1030-b: T111-100 (Chinese BW bowl); KT-1030-c: E111-44 (KT-s-A); KT-1030-d: T111-22 (Chinese BW bowl).
KT-1031	Semi-flexed	SE (135°)	C (5-8)	NA	N	1	2	0	3	The skull faced the right (i.e. the northeast). KT-1031-a: E801-22 (ordinary type); KT-1031-b: T131077 (Chinese mono bowl); KT-1031-c: T200-1 (Thai ware).
KT-1032	Common	N (5°)	C	NA	N	1	2	2	5	KT-1032-a: T205-2 (Thai jarlet); KT-1032-b: E113-16 (KT-s-C); KT-1032-c: T112-22 (Chinese BW plate); KT-1032-d & e: M301-NA (glass bracelet).
KT-1033	Common	SE (140°)	J (8-12)	NA	N	1	2	0	3	KT-1033-a: T204-2 (Thai small jar); KT-1033-b: T112-14 (Chinese BW plate); KT-1033-c: E800-22 (unknown type).
KT-1034	Common	SE (150°)	A	M	Y	2	0	0	2	KT-1034-a: E111-2 (KT-s-A); KT-1034-b: E134-19 (KT-i-D).
KT-1035	Common	N (360°)	A	NA	Y	1	0	0	1	KT-1035-a: E112-1 (KT-s-B).
KT-1036	Common	SE (155°)	A (20-30)	F	Y (8U8L)	3	1	0	4	KT-1036-a: E800-1 (unknown type); KT-1036-b: E111-1 (KT-s-A); KT-1036-c: T112-77 (Chinese BW plate); KT-1036-d: E111-66 (KT-s-A).

KT-1037	Common	SE (155°)	C	NA	N	1	0	0	1	KT-1037-a: E113-22 (KT-s-C).
KT-1038	Common	SE (150°)	C (7-10)	NA	N	0	0	2	2	KT-1038-a & b: M222-16 (brass anklet on right ankle).
KT-1039	Common	S (160°)	A	NA	Y	2	3	1	6	KT-1039-a: M901-11 (bracelet on left wrist); KT-1039-b: E111-44 (KT-s-A); KT-1039-c: T204-22 (Thai small jar); KT-1039-d: T112-22 (Chinese BW plate); KT-1039-e: E112-22 (KT-s-B); KT-1039-f: T204-22 (Thai small jar).
KT-1040	Common	N (340°)	A	NA	Y (6U6L)	2	1	0	3	KT-1040-a: E803-1 (earthenware); KT-1040-b: T111-22 (Chinese BW bowl); KT-1040-c: E111-22 (KT-s-A).
KT-1041	Common	SE (145°)	A (18-23)	NA	N	2	3	0	5	KT-1041-a: E110-4 (KT-s-B or C); KT-1041-b: T111-4 (Chinese BW bowl); KT-1041-c: T111-13 (Chinese BW bowl); KT-1041-d: T114-13 (Chinese BW small jar); KT-1041-e: E111-44 (KT-s-A).
KT-1042	Common	E (90°)	A (25-30)	M	Y	4	3	2	9	KT-1042-a: E931-1 (intru-comb-incised ware form A); KT-1042-b: T112-1 (Chinese BW plate); KT-1042-c: E117-1 (KT-s-L); KT-1042-d: T901-2 (bowl); KT-1042-e: E111-2 (KT-s-A); KT-1042-f: T904-99 (small jar); KT-1042-g: E111-5 (KT-s-A); KT-1042-h & i: M220-1 (brass object in 1042-c).
KT-1043	Common	SE (145°)	A	NA	NA	1	0	1	2	KT-1043-a: M205-4 (metal spear blade); KT-1043-b: E114-3 (KT-s-D1d).

KT-1044	Common	SE (145°)	A	NA	NA	0	5	1	6	KT-1044-a: T900-10 (unknown TC item); KT-1044-b: T909-10 (ewer); KT-1044-c: T902-10 (big plate); KT-1044-d: T900-10 (unknown TC item); KT-1044-e: T909-10 (ewer); KT-1044-f: M240-100 (gold object beside left chin).
KT-1045	Common	SE (150°)	A	NA	NA	2	3	2	7	KT-1045-a: T905-17 (jarlet); KT-1045-b: T901-17 (bowl); KT-1045-c: E116-17 (KT-s-G); KT-1045-d: T901-17 (bowl); KT-1045-e: M900-17 (unknown object); KT-1045-f: M208-17 (metal digging object); KT-1045-g: E111-17 (KT-s-A).
KT-1046	Non-skeleton	NA	NA	NA	NA	0	1	0	1	There is no bone found. KT-1046-a: T200-NA (Thai ware).
KT-1047	Non-skeleton	NA	NA	NA	NA	0	2	0	2	There is no bone found. KT-1047-a: T200-NA (Thai ware); KT-1047-b: T110-NA (Chinese BW ware).
KT-1048	Non-skeleton	NA	NA	NA	NA	2	2	0	4	There is no bone found. KT-1048-a & b: E113-NA (KT-s-C); KT-1048-c: T111-NA (Chinese BW bowl); KT-1048-d: T112-NA (Chinese BW plate).
KT-1049	Semi-flexed	N (20°)	C (5-10)	NA	N	0	0	0	0	The skull faced the right (i.e. the west).
KT-1050	Common	NW (330°)	C	NA	N	2	2	0	4	KT-1050-a: T111-NA (Chinese BW bowl); KT-1050-b: T205-NA (Thai small jarlet); KT-1050-c & d: E800-NA.
KT-1051	Common	SE (145°)	A	NA	NA	0	2	1	3	KT-1051-a: T201-19 (Thai bowl); KT-1051-b: T112-33 (Chinese BW plate); KT-1051-c: M111-18 (spindle whorl).
KT-1052	Common	NW (330°)	C (5-10)	NA	N	2	1	0	3	KT-1052-a: E111-NA (KT-s-A); KT-1052-b: T111-100 (Chinese BW bowl); KT-1052-c: E800-22 (unknown type).

KT-1053	Common	E (75°)	A	NA	Y (6U6L)	1	3	0	4	KT-1053-a: E111-1 (KT-s-A); KT-1053-b: T901-1 (bowl); KT-1053-c: T904-1 (small jar); KT-1053-d: T901-77 (bowl).
KT-1054	Common	NA	C	NA	NA	0	0	0	0	
KT-1055	Common	SE (145°)	A	NA	Y	1	1	0	2	KT-1055 is close to KT-1056, but in opposite orientation. KT-1055-a: T132-11 (Chinese monochrome plate); KT-1055-b: E111-44 (KT-s-A).
KT-1056	Common	NW (325°)	A	NA	Y (?U4L)	2	0	0	2	KT-1056 is close to KT-1055, but in opposite orientation. KT-1056-a & b: E800-6 (unknown type).
KT-1057	Common	NW (335°)	A	NA	NA	2	3	0	5	KT-1057-a: E113-22 (KT-s-C); KT-1057-b: T161-22 (Chinese over-glazed bowl); KT-1057-c: E800-22 ((unknown type earthenware); KT-1057-d: T112-22 (Chinese BW plate); KT-1057-e: T119-22 (Chinese BW dish).
KT-1058	Common	SE (140°)	A (25-30)	M	Y	1	1	0	2	KT-1058-a: T162-77 (Chinese over-glazed plate); KT-1058-b: E111-20 (KT-s-A).
KT-1059	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. KT-1059-a: E121-NA (KT-p-A).
KT-1060	Common	S (160°)	A (50+)	NA	Y	1	0	0	1	Skeleton among scattered shells. KT-1060-a: E800-9 (unknown type).
KT-1061	Multiple Common	SE (150°)	A (50+)	NA	NA	1	0	0	1	KT-1061 and 1062 were together. There was wound on right femur of 1061. KT-1061-a: E112-1 (KT-s-B).
KT-1062	Multiple Common	SE (150°)	C	NA	N	2	1	0	3	KT-1062 and 1061 were together. KT-1062-a: E801-100 (common EA); KT-1062-b: T111-4 (Chinese BW bowl); KT-1062-c: E801-4 (common EA).
KT-1063	Common	S (160°)	A (20-25)	NA	N	1	1	0	2	There is a hole on the forehead of this skull. KT1063-a: E114-1 (KT-s-D2b ?); KT-1063-b: T205-9 (Thai jarlet).

KT-1064	Common	SE (150°)	C (5-8)	NA	N	2	0	0	2	KT-1064-a: E113-1 (KT-s-C); KT-1064-b: E113-1 (KT-s-A).
KT-1065	Common	S (170°)	A (50+)	NA	Y	0	1	0	1	KT-1065-a: T112-100 (Chinese BW plate).
KT-1066	Common	S (160°)	A (20-25)	NA	NA	1	1	0	2	KT-1066-a: T133-12 (Chinese mono saucer); KT-1066-b: E801-20 (common EA).
KT-1067	Common	S (165°)	A (17-22)	NA	N	1	0	0	1	KT-1067-a: E112-1 (KT-s-B).
KT-1068	Common	S (165°)	A	NA	N	0	0	0	0	
KT-1069	Common	SE (140°)	A	NA	N	0	0	0	0	
KT-1070	Common	S (170°)	A	NA	Y	0	0	0	0	
KT-1071	Common	S (160°)	A	NA	Y	2	5	2	9	KT-1071-a: T901-1 (bowl); KT-1071-b: E801-3 (Kinalabasa type); KT-1071-c: T901-3 (bowl); KT-1071-d: M205-12 (metal blade); KT-1071-e: T901-33 (bowl); KT-1071-f: T204-22 (Thai small jar); KT-1071-g: T902-22 (plate); KT-1071-h: E801-22 (ordinary type); KT-1071-i: M519-22 (unknown stone object).
KT-1072	Common	SE (150°)	J	NA	NA	1	0	1	2	KT-1072-a: E801-1 (ordinary type); KT-1072-b: M111-66 (spindle whorl).
KT-1073	Common	S (165°)	J (12-15)	NA	N	2	1	0	3	KT-1073-a: E111-88 (KT-s-A); KT-1073-b: T113-77 (Chinese BW- saucer); KT-1073-c: E112-22 (KT-s-B).
KT-1074	Common	SE (155°)	C (5-8)	NA	N	0	0	0	0	
KT-1075	Semi-flexed	S (160°)	J (10-15)	NA	N	2	1	0	3	The skull faced the left (i.e. the west). KT-1075-a: E800-22 (unknown type); KT-1075-b: T111-22 (Chinese BW bowl); KT-1075-c: E801-22 (ordinary type).

KT-1076	Common	SE (140°)	A	M	Y (6U?L)	1	2	1	4	KT-1076-a: E134-1 (KT-i-D); KT-1076-b: M410-2 (animal tooth); KT-1076-c: T132-3 (Chinese celadon plate); KT-1076-d: T131-11 (Chinese monochrome big bowl).
KT-1077	Common	NA	I	NA	N	2	2	1	5	KT-1077-a: E112-1 (KT-s-B); KT-1077-b: T163-1 (Chinese over-glazed saucer); KT-1077-c: T112-1 (Chinese BW plate); KT-1077-d: M903-77 (beads for 3); KT-1077-e: E112-22 (KT-s-B).
KT-1078	Common	SE (150°)	A	NA	Y	2	1	0	3	KT-1078-a: T111-22 (Chinese BW bowl); KT-1078-b: E112-22 (KT-s-B); KT-1078-c: E801-22 (ordinary type).
KT-1079	Common	SE (155°)	A	NA	NA	1	0	0	1	KT-1079-a: E114-99 (KT-s-D1d).
KT-1080	Disturbed Multiple	NA	NA	NA	NA	0	1	0	1	There were at least three individuals in this burial, and all badly disturbed. Not accounted in analysis. KT-1080-a: T131-NA (Chinese monochrome bowl).
KT-1081	Common	NW (330°)	A	NA	Y	2	0	0	2	KT-1081-a: E112-1 (KT-s-B); KT-1081-b: E111-18 (KT-s-A).
KT-1082	Common	S (165°)	C (3-5)	NA	N	2	0	2	4	KT-1082-a: E113-1 (KT-s-C); KT-1082-b: E111-1 (KT-s-A); KT-1082-c: M205-12 (metal spear blade); KT-1082-d: M900-16 (unknown object).
KT-1083	Non-skeleton	NA	NA	NA	NA	0	1	1	2	There is no bone found. KT-1083-a: M120-NA (base of stoneware jar). KT-1083-b: M410-NA (animal jaw).
KT-1084	Headless	SE (140°)	A	NA	NA	0	0	0	0	The atlas bone present but skull absent. Some long bones were disturbed.
KT-1085	Common	S (165°)	A (O)	NA	NA	2	0	0	2	KT-1085-a: E111-22 (KT-s-A); KT-1085-b: E113-22 (KT-s-C).
KT-1086	Headless	SE (155°)	J	NA	N	0	0	0	0	
KT-1087	Common	NA	C	NA	N	0	0	0	0	

KT-1088	Common	SE (150°)	J (7-10)	NA	Y	2	2	0	4	This is the only juvenile with filed teeth. KT-1088-a: E111-1 (KT-s-A); KT-1088-b: E114-1 (KT-s-D2b); KT-1088-c & d: T112-22 (Chinese BW plate).
KT-1089	Non-skeleton	NA	NA	NA	NA	2	0	0	2	There is no bone found. KT-1089 is close to KT-1088. KT-1089-a: E111-NA (KT-s-A). KT-1089-b: E800-NA (unknown type).
KT-1090	Multiple Jar burial	SE (150°)	I	NA	NA	2	1	0	3	KT-1090A was buried under the burial jar of KT-1090. KT-1090-jar: TC Chinese stoneware as burial jar; KT-1090-a & b: E800; KT-1090-c: T112 (Chinese BW plate, cover of burial jar).
KT-1090A	Multiple Common	SE (150°)	C	NA	N	0	1	0	1	KT-1090A was buried under the burial jar of KT-1090. KT-1090A-a: T131-77 (Chinese monochrome bowl).
KT-1091	Common	N (15°)	C (7-12)	NA	N	3	3	3	9	KT-1092 is very close to KT-1091. KT-1091-a: E801-8 (ordinary type); KT-1091-b, c, & d: M430-NA (large shell); KT-1091-e: T131-20 (Chinese monochrome bowl); KT-1091-f & g: T112-21 (Chinese BW plate); KT-1091-h: E801-22 (ordinary type); KT-1091-i: E804-20 (kendi type).
KT-1092	Common	N (10°)	C (10-12)	NA	N	0	0	0	0	KT-1092 is very close to KT-1091.
KT-1093	Common	SE (150°)	A (50+)	NA	Y	1	1	0	2	KT-1093-a: E114-2 (KT-s-D2a); KT-1093-b: T205-2 (Thai jarlet).
KT-1094	Common	SE (150°)	A	NA	Y	1	0	1	2	KT-1094-a: M210-3 (iron object); KT-1094-b: E114-20 (KT-s-D2a).
KT-1095	Common	NW (320°)	C (8-12)	NA	N	0	0	1	1	KT-1095-a: M215-3 (iron spear blade).
KT-1096	Headless	SE (150°)	J	NA	N	0	0	0	0	
KT-1097	Common	SE (145°)	J (10-15)	NA	N	1	0	0	1	KT-1097-a: E134-4 (KT-i-D).

KT-1098	Common	S (160°)	A	NA	Y	0	2	1	3	KT-1098-a: T110-1 (Chinese BW ware); KT-1098-b: T111-8 (Chinese BW bowl); KT-1098-c: M410-17 (deer horn).
KT-1099	Disturbed Bundle	SE (130°)	A	NA	NA	0	3	1	4	Long bones and ribs bundled at the feet position. KT-1099-a: M410-NA (deer horn); KT-1099-b, c, & d: T231-NA (Thai monochrome bowl).
KT-1100	Common	SE (145°)	A	NA	NA	2	0	0	2	There were small shells all around the grave. KT-1100-a: E111-2 (KT-s-A); KT-1100-b: E113-22 (KT-s-C).
KT-1101	Common	SE (155°)	C (5-7)	NA	N	0	0	0	0	
KT-1102	Common	S (180°)	C (2-5)	NA	N	2	3	1	6	KT-1102-a & b: T111-NA (Chinese BW bowl); KT-1102-c: T209-NA (Thai jar cover); KT-1102-d: E111-NA (KT-s-A); KT-1102-e: M410-NA (animal bone object); KT-1102-f: E112-NA (KT-s-B).
KT-1103	Common	SE (155°)	A	NA	Y	1	0	1	2	KT-1103-a: M205-5 (metal arrow blade); KT-1103-b: E801-33 (ordinary type).
KT-1104	Common	E (100°)	J	NA	N	2	6	6	14	KT-1104-a: T111-22 (Chinese BW bowl); KT-1104-b: E801-22 (ordinary type); KT-1104-c: T112-22 (Chinese BW plate); KT-1104-d: T111-22 (Chinese BW bowl); KT-1104-e & f: M209-22 (metal hinge); KT-1104-g: M209-22 (metal padlock); KT-1104-h: M210-22 (iron object); KT-1104-i: T110-22 (Chinese BW item); KT-1104-j: T115-22 (Chinese BW jarlet); KT-1104-k: E801-22 (ordinary type); KT-1104-l: T112-11 (Chinese BW plate); KT-1104-m: M903-11 (8 beads); KT-1104-n: M430-88 (shell).
KT-1105	Common	SE (145°)	A	NA	NA	0	0	0	0	KT-1105 is close to KT-1106.

KT-1106	Common	SE (145°)	A	NA	Y	2	2	1	5	KT-1106 is close to KT-1105. There is a hole on forehead. KT-1106-a: E801-1 (ordinary type); KT-1106-b: E111-55 (KT-s-A); KT-1106-c: T123-11 (Chinese WW saucer); KT-1106-d: T112-11 (Chinese BW plate); KT-1106-e: M111-66 (spindle whorl).
KT-1107	Common	NW (320°)	C (8-12)	NA	N	0	0	0	0	
KT-1108	Common	NW (335°)	J	NA	N	3	0	1	4	KT-1108-a: M205-8 (arrow blade); KT-1108-b: E801-20 (ordinary type); KT-1108-c: E801-17 (ordinary type); KT-1108-d: E112-22 (KT-s-B).
KT-1110	Common	E (100°)	C (3-5)	NA	N	1	2	1	4	KT-1110-a: E113-4 (KT-s-C); KT-1110-b: T945-2 (stoneware jarlet); KT-1110-c: M512-4 (worked stone); KT-1110-d: T111-77 (Chinese BW bowl).
KT-1111	Jar burial	S (155°)*	I	NA	NA	0	0	0	0	KT-1111-jar: T144 (Chinese stoneware jar as burial container).
KT-1112	Common	S (175°)	C (8-12)	NA	NA	1	0	0	1	KT-1112-a: E112-1 (KT-s-B).
KT-1113	Common	S (165°)	A	NA	Y	0	0	0	0	
KT-1114	Common	S (165°)	A (50+)	NA	NA	0	0	0	0	
KT-1115	Common	NA	NA	NA	NA	0	0	0	0	
KT-1116	Common	NA	NA	NA	NA	0	0	0	0	
KT-1117	Common	N (355°)	J	NA	N	0	0	0	0	KT-1117 is close to KT-1118, 1119
KT-1118	Common	N (355°)	C	NA	N	0	0	0	0	KT-1118 is close to KT-1117, 1119.

KT-1119	Common	N (355°)	J (14-17)	NA	N	0	0	0	0	KT-1119 is close to KT-1117, 1118.
KT-1120	Semi-flexed	S (180°)	A	NA	Y	1	2	0	3	The skull faced the left (i.e. the west). KT-1120-a: E803-1 (kendi type); KT-1120-b & c: T131-1 (Chinese monochrome bowl).
KT-1121	Jar burial	S (160°)*	I	NA	N	0	0	0	0	KT-1121-jar: T144 (Chinese stoneware as burial container).
KT-1122	Common	S (170°)	C	NA	N	2	2	1	5	KT-1122-a: E801-1 (ordinary type); KT-1122-b: E801-2 (ordinary type); KT-1122-c: M111-1 (spindle whorl); KT-1122-d: T205-13 (Thai jarlet); KT-1122-e: T112-22 (Chinese BW plate).
KT-1123	Common	S (165°)	A	NA	N	2	4	2	8	KT-1123-a: T133-77 (Chinese monochrome saucer); KT-1123-b: E111-15 (KT-s-A); KT-1123-c: M111-15 (spindle whorl); KT-1123-d: T205-17 (Thai jarlet); KT-1123-e: T133-17 (Chinese monochrome saucer); KT-1123-f: T204-17 (Thai small jar); KT-1123-g: M410-17 (animal bone); KT-1123-h: E801-22 (ordinary type).
KT-1124	Semi-flexed	S (160°)	C	NA	N	2	1	0	3	The skull faced the left (i.e. the west). KT-1124-a: T130-1 (Chinese monochrome hole-bottom); KT-1124-b: E801-22 (ordinary type); KT-1124-c: E111-22 (KT-s-A).
KT-1125	Common	N (350°)	C (7-9)	NA	N	0	0	0	0	
KT-1126	Headless	S (160°)	A	NA	N	1	0	1	2	KT-1126-a: E801-5 (ordinary type); KT-1126-b: M111-88 (spindle whorl).
KT-1127	Multiple Common	N (345°)	A	NA	NA	3	0	0	3	KT-1127/28 were buried together. KT-1127-a, b, & c: E801-22 (ordinary type).
KT-1128	Multiple Skull-only	NA	A	NA	NA	0	0	0	0	KT-1127/28 were buried together.

KT-1129	Jar burial	S (180°)*	I	NA	N	0	0	0	0	KT-1129-jar: T144 (Chinese stoneware jar as burial container).
KT-1130	Common	S (160°)	A	NA	Y	1	0	0	1	KT-1130-a: E111-17 (KT-s-A).
KT-1131	Common	S (180°)	A	NA	NA	2	1	1	4	KT-1131 is close to KT-1132. KT-1131-a: T111-19 (Chinese BW bowl); KT-1131-b: E801-20 (ordinary type); KT-1131-c: M111-17 (spindle whorl); KT-1131-d: E801-1 (ordinary type).
KT-1132	Common	SE (140°)	J	NA	N	0	0	0	0	KT-1132 is close to KT-1131
KT-1133	Common	SE (145°)	A	NA	NA	1	0	0	1	KT-1133-a: E801-21 (ordinary type).
KT-1134	Common	S (170°)	A	NA	Y	1	1	1	3	KT-1134-a: T111-5 (Chinese BW bowl); KT-1134-b: E111-44 (KT-s-A); KT-1134-c: M111-4 (spindle whorl).
KT-1135	Common	S (180°)	A	NA	Y (6U5L)	1	1	0	2	KT-1135-a: T111-22 (Chinese BW bowl); KT-1135-b: E111-17 (KT-s-A).
KT-1136	Common	E (90°)	J	NA	N	0	1	0	1	KT-1136-a: T111-15 (Chinese BW bowl).
KT-1137	Common	S (180°)	A	NA	N	2	1	1	4	KT-1137-a: E117-2 (KT-s-N); KT-1137-b: T301-2 (Vietnamese small bowl); KT-1137-c: M111-3 (spindle whorl); KT-1137-d: E111-55 (KT-s-A).
KT-1138	Common	S (170°)	A	NA	NA	2	3	1	6	KT-1138-a: T205-1 (Thai jarlet); KT-1138-b: M111-2 (spindle whorl); KT-1138-c: E114-99 (KT-s-D1a); KT-1138-d: T131-10 (Chinese Celadon bowl); KT-1138-e: T112-77 (Chinese BW plate); KT-1138-f: E111-16 (KT-s-A).

KT-1139	Common	S (160°)	A	NA	Y	1	3	1	5	KT-1139-a: T131-1 (Chinese Celadon bowl); KT-1139-b: T205-1 (Thai jarlet); KT-1139-c: E111-1 (KT-s-A); KT-1139-d: M111-2 (spindle whorl); KT-1139-e: T209-77 (Thai small jar cover).
KT-1140	Headless	S (190°)	A	NA	NA	0	0	0	0	
KT-1141	Common	SE (150°)	J (12-16)	NA	N	1	0	0	1	KT-1141-a: E830-1 (a decorated pot).
KT-1142	Common	S (180°)	A	NA	Y	1	1	1	3	KT-1142-a: T111-1 (Chinese BW bowl); KT-1142-b: E111-3 (KT-s-A); KT-1142-c: M111-8 (spindle whorl).
KT-1143	Common	SE (145°)	NA	NA	NA	0	0	0	0	
KT-1144	Common	N (360°)	J	NA	NA	0	0	0	0	
KT-1145	Multiple Common	S (165°)	A	NA	Y	0	0	0	0	KT-1145/46 were buried together.
KT-1146	Multiple Headless	S (165°)	A	NA	NA	2	1	0	3	KT-1145/46 were buried together. KT-1146-a: E113-1 (KT-s-C); KT-1146-b: T131-100 (Chinese monochrome bowl, placed at the position of head); KT-1146-c: E111-17 (KT-s-A).
KT-1147	Common	E (90°)	J (12-14)	NA	N	2	1	0	3	KT-1147 is very close to KT-1148. KT-1147-a: E111-NA (KT-s-A); KT-1147-b: T111-NA (Chinese BW bowl); KT-1147-c: E113-NA (KT-s-C).
KT-1148	Common	S (180°)	A	NA	Y	1	2	1	4	KT-1148 is very close to KT-1147. KT-1148-a: T112-77 (Chinese BW plate); KT-1148-b: E801-22 (ordinary type); KT-1148-c: T111-22 (Chinese BW bowl); KT-1148-d: M210-13 (iron object).

KT-1149	Common	S (160°)	A	NA	Y	1	1	1	3	KT-1149 is beside KT-1150, in opposite orientation. KT-1149-a: M410-4 (deer horn); KT-1149-b: E111-88 (KT-s-A); KT-1149-c: T111-77 (Chinese BW bowl).
KT-1150	Common	N (340°)	A	NA	NA	1	1	1	3	KT-1149 is beside KT-1150, in opposite orientation. KT-1150-a: E800-19 (unknown type); KT-1150-b: T112-33 (Chinese BW plate); KT-1150-c: M111-12 (spindle whorl).
KT-1152	Common	NW (335°)	A	NA	NA	1	2	0	3	KT-1152 is beside KT-1155, in opposite orientation. KT-1152-a: E800-1 (unknown type); KT-1152-b: T111-3 (Chinese BW bowl); KT-1152-c: T132-16 (Chinese monochrome plate).
KT-1153	Common	S (180°)	C (6-8)	NA	N	1	0	0	1	KT-1153-a: E113-1 (KT-s-C).
KT-1154	Common	S (180°)	A	NA	NA	0	0	0	0	Skull bones scattered
KT-1155	Common	SE (155°)	A	NA	NA	1	1	0	2	KT-1152 is beside KT-1155, in opposite orientation. KT-1155-a: E801-33 (ordinary type); KT-1155-b: T111-77 (Chinese BW bowl).
KT-1156	Disturbed Bundle	S (160°)	A	NA	NA	0	0	0	0	It seems the lower half skeleton disturbed and bundled with skull, headless (?).
KT-1157	Common	S (180°)	A	NA	Y (6U6L)	1	0	1	2	KT-1157-a: E111-17 (KT-s-A); KT-1157-b: M111-13 (spindle whorl).
KT-1158	Common	NW (320°)	J	NA	N	0	0	0	0	
KT-1159	Common	E (90°)	C (5-7)	NA	N	1	0	0	1	KT-1159-a: E803-88 (kanilabasa type).
KT-1160	Common	S (180°)	A	NA	Y	0	0	0	0	
KT-1161	Common	NA	A (20-25)	NA	N	0	0	0	0	

KT-1162	Common	N (20°)	A (20-23)	NA	N	2	0	0	2	KT-1162-a & b: E801-22 (ordinary type).
KT-1163	Common	N (360°)	A	NA	Y	0	1	0	1	KT-1163-a: T111-1 (Chinese BW bowl).
KT-1164	Multiple Common	N (360°)	A	NA	Y	3	0	0	3	One skull (KT-1165) at right side of head of KT-1164. KT-1164-a: E112-1 (KT-s-B); KT-1164-b: E111-2 (KT-s-A); KT-1164-c: E113-99 (KT-s-C).
KT-1165	Multiple Skull-only	NA	A	NA	NA	0	0	0	0	KT-1165 was at right side of head of KT-1164.
KT-1166	Common	N (360°)	A	NA	Y	0	0	0	0	
KT-1167	Multiple Headless	S (170°)	A	NA	NA	0	0	0	0	KT-1167A was placed at the feet of KT-1167.
KT-1167A	Multiple Skull-only	NA	A	NA	NA	0	0	0	0	KT-1167A was placed at the feet of KT-1167.
KT-1168	Common	NE (55°)	C	NA	NA	0	0	0	0	
KT-1169	Jar burial	S (160°)*	I	NA	N	2	2	1	5	KT-1169-jar: T144 (Chinese SW as burial jar); KT-1169-a & b: E800 (unknown type); KT-1169-c: M210 (metal object); KT-1169-d: T113 (Chinese BW-hb bowl as cover of burial jar); KT-1169-e: T112 (Chinese BW plate).
KT-1170	Common	SE (155°)	A	NA	Y	2	3	0	5	KT-1170-a: E116-1 (KT-s-F); KT-1170-b: T209-1 (Thai small jar cover); KT-1170-c: T113-10 (Chinese BW-hb saucer); KT-1170-d: T113-11 (Chinese BW-hb saucer); KT-1170-e: E111-17 (KT-s-A).

KT-1171	Common	NW (320°)	A	NA	Y	1	0	0	1	KT-1171-a: E111-88 (KT-s-A).
KT-1172	Common	S (165°)	C (7-9)	NA	N	0	0	0	0	
KT-1173	Common	S (180°)	A	NA	Y	1	0	0	1	KT-1173-a: E111-22 (KT-s-A).
KT-1174	Common	S (180°)	A	M	Y	1	5	0	6	KT-1174-a: T304-1 (Vietnamese jar); KT-1174-b: T112-77 (Chinese BW plate); KT-1174-c: T111-44 (Chinese BW big bowl); KT-1174-d: T111-44 (Chinese BW bowl); KT-1174-e: T111-16 (Chinese BW bowl); KT-1174-f: E111-17 (KT-s-A).
KT-1175	Headless	S (180°)	A	NA	NA	0	0	0	0	
KT-1176	Disturbed Bundle	NA	A	NA	NA	0	0	1	1	This burial was badly disturbed, bones were bundled to 4 groups. KT-1176-a: M240-NA (gold object).
KT-1177	Semi-flexed	S (165°)	A	NA	Y	1	0	0	1	The skull faced the left (i.e. the west). KT-1177-a: E111-1 (KT-s-A).
KT-1178	Common	SW (210°)	A	NA	NA	0	0	0	0	
KT-1179	Common	N (360°)	C (7-9)	NA	N	2	3	0	5	KT-1178-a: E112-1 (KT-s-B); KT-1178-b: T111-2 (Chinese BW bowl); KT-1178-c: E111-22 (KT-s-A); KT-1178-d: T111-77 (Chinese BW big bowl); KT-1178-e: T111-66 (Chinese BW bowl).
KT-1180	Prone	S (160°)	A	NA	Y	2	4	2	8	KT-1180-a: E803-1 (kanilabasa type); KT-1180-b: T133-3 (Chinese monochrome saucer); KT-1180-c: E801-3 (ordinary type); KT-1180-d: M410-66 (animal teeth); KT-1180-e: M410-66 (deer horn); KT-1180-f: T111-10 (Chinese BW bowl); KT-1180-g: T111-77 (Chinese BW big bowl); KT-1180-h: T111-11 (Chinese BW bowl).

KT-1181	Common	NA	C	NA	NA	0	1	0	1	KT-1181-a: T205-NA (Thai jarlet).
KT-1182	Common	S (180°)	A	NA	Y	1	1	1	3	KT-1182-a: E111-44 (KT-s-A); KT-1182-b: T111-17 (Chinese BW bowl); KT-1182-c: M410-99 (animal teeth).
KT-1183	Headless	SE (145°)	A	NA	NA	0	0	1	1	KT-1183-a: M510-100 (One coral rock was placed at the position of the skull).
KT-1184	Common	S (165°)	A	M	Y	1	0	0	1	KT-1184-a: E111-5 (KT-s-A).
KT-1185	Multiple Common	S (180°)	A	NA	NA	1	0	0	1	KT-1185/86 were buried together. KT-1185-a: E112-22 (KT-s-B).
KT-1186	Multiple Common	SE (140°)	C (3-5)	NA	N	0	0	0	0	KT-1185/86 were buried together.
KT-1187	Common	SE (135°)	A	F	Y	1	0	0	1	KT-1187-a: E111-1 (KT-s-A).
KT-1188	Common	S (180°)	J (11-15)	NA	N	2	1	0	3	KT-1188-a: T131-5 (Chinese monochrome bowl); KT-1188-b: E801-16 (ordinary type); KT-1188-c: E112-22 (KT-s-B).
KT-1189	Semi-flexed	N (340°)	J (12-15)	NA	N	0	0	0	0	The skull faced the right (i.e. the west).
KT-1190	Common	SE (155°)	A	F	NA	1	1	1	3	KT-1190-a: M111-5 (spindle whorl); KT-1190-b: T131-16 (Chinese monochrome bowl); KT-1190-c: E111-16 (KT-s-A).
KT-1191	Common	S (160°)	J	NA	NA	2	2	0	4	KT-1194-a: E111-1 (KT-s-A); KT-1194-b: T304-99 (Vietnamese jar); KT-1194-c: E804-9 (kendi type); KT-1194-d: T303-77 (Vietnamese saucer).
KT-1192	Common	S (170°)	A	NA	Y	0	1	0	1	KT-1192-a: T112-77 (Chinese BW plate).

KT-1193	Common	S (170°)	A	NA	NA	2	4	1	7	KT-1193-a: T113-4 (Chinese BW big saucer); KT-1193-b: T113-99 (Chinese BW saucer); KT-1193-c: T204-99 (Thai jar); KT-1193-d: T112-55 (Chinese BW big plate); KT-1193-e: E111-21 (KT-s-A); KT-1193-f: E112-1 (KT-s-B); KT-1193-g: M111-55 (spindle whorl).
KT-1194	Common	E (90°)	J	NA	NA	1	2	1	4	KT-1194-a: T131-77 (Chinese monochrome bowl); KT-1194-b: T131-19 (Chinese monochrome bowl); KT-1194-c: E112-22 (KT-s-B); KT-1194-d: M510-18 (a stone at feet).
KT-1195	Common	S (170°)	A	NA	NA	0	0	0	0	
KT-1196	Common	E (75°)	J	NA	N	2	2	3	7	KT-1196-a: E112-1 (KT-s-B); KT-1196-b: T204-10 (Thai jar); KT-1196-c: T162-77 (Chinese over-glazed plate); KT-1196-d: M222-18 (brass anklets at right ankle); KT-1196-e: E111-33 (KT-s-A); KT-1196-f: M903-10 (beads on right wrist); KT-1196-g: M222-18 (brass anklets at right ankle).
KT-1197	Headless	S (180°)	A	NA	NA	2	1	1	4	KT-1197-a: M111-66 (spindle whorl); KT-1197-b: E801-14 (ordinary type); KT-1197-c: E801-15 (ordinary type); KT-1197-d: T131-6 (Chinese monochrome bowl).
KT-1198	Semi-flexed	SE (140°)	A	NA	Y	0	0	0	0	The skull faced the left (i.e. the southwest).
KT-1199	Common	S (165°)	A	NA	NA	0	0	0	0	
KT-1200	Common	S (160°)	C (4-7)	NA	N	0	1	0	1	KT-1200-a: T201-3 (Thai bowl).
KT-1201	Headless	E (90°)	J	NA	N	0	1	0	1	KT-1201-a: T209-1 (Thai small jar cover).

KT-1202	Common	S (175°)	A	NA	NA	2	2	1	5	KT-1202-a: E801-1 (ordinary type); KT-1202-b: T901-100 (bowl); KT-1202-c: T901-77 (bowl); KT-1202-d: M111-66 (spindle whorl); KT-1202-e: E111-8 (KT-s-A).
KT-1203	Common	S (180°)	C	NA	NA	0	0	0	0	
KT-1204	Common	N (15°)	C	NA	NA	1	2	0	3	KT-1204-a: T205-1 (Thai jarlet); KT-1204-b: E112-13 (KT-s-B); KT-1204-c: T111-77 (Chinese BW bowl).
KT-1205	Common	S (170°)	A (18-22)	F	Y	2	2	2	6	KT-1205-a: E113-12 (KT-s-C); KT-1205-b: T904-55 (small jar); KT-1205-c: M210-55 (piece of iron); KT-1205-d: T112-55 (Chinese BW plate); KT-1205-e: E801-22 (ordinary type); KT-1205-f: M111-55 (spindle whorl).
KT-1206	Common	N (340°)	C (5-8)	NA	N	0	0	0	0	
KT-1207	Common	S (175°)	A	NA	NA	1	1	0	2	KT-1207-a: T111-20 (Chinese BW bowl); KT-1207-b: E831-20 (decorated ordinary form).
KT-1208	Common	S (180°)	A	NA	NA	2	2	0	4	KT-1208-a: E112-1 (KT-s-B); KT-1208-b: T112-77 (Chinese BW plate); KT-1208-c: E111-33 (KT-s-A); KT-1208-d: T204-22 (Thai small jar).
KT-1209	Common	NA	NA	NA	NA	1	1	0	2	KT-1209-a: T111-NA (Chinese BW bowl); KT-1209-b: E111-NA (KT-s-A).
KT-1210	Common	S (165°)	NA	NA	NA	1	0	0	1	KT-1210-a: E111-NA (KT-s-A).
KT-1211	Headless	S (160°)	A	NA	NA	0	2	0	2	KT-1211-a: T119-18 (Chinese BW cup); KT-1211-b: T134-18 (Chinese monochrome jar).
KT-1212	Jar burial	NA	I	NA	N	0	0	0	0	KT-1212-jar: T144 (Chinese stoneware jar as burial container).

KT-1213	Common	S (160°)	A	NA	Y	1	1	1	3	KT-1213-a: T111-88 (Chinese BW bowl); KT-1213-b: M111-88 (spindle whorl); KT-1213-c: E111-17 (KT-s-A).
KT-1214	Common	SE (150°)	A	NA	Y	2	1	0	3	KT-1214-a: E804-1 (kendi type); KT-1214-b: E111-3 (KT-s-A); KT-1214-c: T132-55 (Chinese monochrome plate).
KT-1215	Common	N (340°)	A	NA	NA	2	2	0	4	Hands in semi-folding position. KT-1215-a: E801-22 (ordinary type); KT-1215-b: E111-22 (KT-s-A); KT-1215-c: T111-22 (Chinese BW bowl); KT-1215-d: T112-22 (Chinese BW plate).
KT-1216	Common	S (160°)	C	NA	NA	2	0	0	2	KT-1216-a & b: E801-NA (ordinary type).
KT-1217	Common	S (165°)	C (5-8)	NA	N	1	1	0	2	KT-1217-a: E112-1 (KT-s-B); KT-1217-b: T111-14 (Chinese BW bowl).
KT-1218	Common	S (160°)	A	NA	Y	2	0	0	2	KT-1218-a & b: E801-22 (ordinary type).
KT-1219	Common	S (165°)	A	NA	NA	3	1	1	5	KT-1219-a: E801-1 (ordinary type); KT-1219-b: M111-17 (spindle whorl); KT-1219-c: T111-17 (Chinese BW bowl); KT-1219-d: E111-22 (KT-s-A); KT-1219-e: E830-22 (with decorated).
KT-1220	Common	S (180°)	A	NA	NA	0	0	0	0	
KT-1221	Common	SE (155°)	C (3-5)	NA	N	0	0	0	0	
KT-1222	Common	S (180°)	C	NA	N	1	0	0	1	KT-1222-a: E113-NA (KT-s-C).
KT-1223	Common	S (160°)	A	NA	NA	2	0	0	2	KT-1223-a: E112-22 (KT-s-B); KT-1223-b: E111-22 (KT-s-A).

KT-1224	Headless	W (260°)	A	NA	NA	2	1	0	3	The only skeleton towards west. KT-1224-a: E112-88 (KT-s-B); KT-1224-b: E111-88 (KT-s-A); KT-1224-c: T111-88 (Chinese BW bowl).
KT-1225	Common	S (180°)	A	NA	NA	0	0	0	0	
KT-1226	Common	S (180°)	J	NA	N	1	0	1	2	KT-1226-a: M410-17 (deer horn); KT-1226-b: E801-22 (ordinary type).
KT-1227	Common	S (165°)	J (15-18)	NA	NA	1	2	0	3	This burial was among stones. KT-1227-a: T112-1 (Chinese BW plate); KT-1227-b: T131-3 (Chinese monochrome bowl); KT-1227-c: E111-22 (KT-s-A).
KT-1228	Common	E (110°)	A	NA	NA	1	1	0	2	KT-1228-a: T112-22 (Chinese BW plate); KT-1228-b: E112-22 (KT-s-B).
KT-1229	Headless	S (170°)	A	NA	NA	0	0	0	0	
KT-1230	Common	S (170°)	A	NA	NA	1	2	1	4	There is a metal spear head (KT-1230-b) on right shoulder. KT-1230-a: T112-100 (Chinese BW plate); KT-1230-b: M205-4 (spear head); KT-1230-c: E121-17 (KT-p-A); KT-1230-d: T132-19 (Chinese monochrome plate).
KT-1231	Common	S (165°)	A	NA	NA	0	0	0	0	
KT-1232	Common	S (160°)	A	NA	NA	1	1	0	2	KT-1232-a: E134-4 (KT-i-D); KT-1232-b: T111-4 (Chinese BW bowl).
KT-1233	Common	S (170°)	A	NA	Y	0	0	0	0	
KT-1234	Jar burial	S (160°)*	I	NA	N	0	1	0	1	KT-1234-jar: T144 (Chinese stoneware jar as burial container). KT-1234-a: T132 (Chinese monochrome plate as jar cover).

KT-1235	Common	S (165°)	A	NA	NA	2	4	1	7	KT-1235-a: T111-77 (Chinese BW-hb bowl); KT-1235-b: T100-11 (Chinese ware); KT-1235-c: T100-10 (Chinese ware); KT-1235-d: T100-2 (Chinese ware); KT-1235-e: E111-22 (KT-s-A); KT-1235-f: E112-22 (KT-s-B); KT-1235-g: M430-4 (one large shell on right hand).
KT-1236	Common	S (160°)	J	NA	NA	0	1	0	1	KT-1236-a: T112-88 (Chinese BW plate).
KT-1237	Common	SE (140°)	J	NA	NA	2	1	2	5	KT-1237-a: T131-2 (Chinese monochrome bowl); KT-1237-b & c: E800-1 (unknown type); KT-1237-d: M111-10 (spindle whorl); KT-1237-e: M210-1 (iron item).
KT-1238	Common	SE (135°)	A	NA	NA	1	2	1	4	KT-1238-a: T112-77 (Chinese BW plate); KT-1238-b: E111-99 (KT-s-A); KT-1238-c: T205-1 (Thai jarlet); KT-1238-d: M430-15 (one large shell at left foot).
KT-1239	Jar burial	SE (115°)*	I	NA	N	0	0	0	0	KT-1239-jar: T144 (Chinese stoneware jar as burial container).
KT-1240	Common	SE (140°)	NA	NA	NA	0	0	0	0	
KT-1241	Common	S (180°)	A	NA	Y	0	0	0	0	KT-1241 is very close to KT-1242.
KT-1242	Common	SE (150°)	C (10)	NA	NA	0	0	0	0	KT-1242 is very close to KT-1241.
KT-1243	Common	S (175°)	A	M	Y	5	0	0	5	KT-1243-a: E111-33 (KT-s-A); KT-1243-b: E113-22 (KT-s-C); KT-1243-c: E112-17 (KT-s-B); KT-1243-d & e: E111-17 (KT-s-A).
KT-1244	Common	S (170°)	C	NA	NA	1	0	0	1	KT-1244-a: E113-3 (KT-s-C).

KT-1245	Common	N (340°)	A	NA	NA	1	0	0	1	KT-1245-a: E111-2 (KT-s-A).
KT-1246	Common	SE (150°)	J	NA	NA	2	0	0	2	KT-1246-a & b: E801-1 (ordinary type).
KT-1247	Common	S (160°)	A	F	Y	1	0	0	1	KT-1247-a: E801-1 (ordinary type).
KT-1248	Common	SE (130°)	A	NA	NA	0	1	0	1	KT-1248-a: T111-2 (Chinese BW bowl).
KT-1249	Jar burial	N (360°)*	I	NA	N	0	0	0	0	KT-1249-jar: E141 (a large earthenware pot as burial container).
KT-1250	Common	S (180°)	A	M	Y	1	2	1	4	KT-1250-a: M205-12 (metal spear head); KT-1250-b: T200-18 (Thai ware); KT-1250-c: T131-18 (Chinese monochrome bowl); KT-1250-d: E111-21 (KT-s-A).
KT-1251	Common	S (170°)	A	NA	N	2	2	0	4	KT-1251-a: E113-1 (KT-s-C); KT-1251-b: T111-99 (Chinese BW bowl); KT-1251-c: T111-77 (Chinese BW bowl); KT-1251-d: E111-33 (KT-s-A).
KT-2000	Common	S (170°)	J	NA	NA	0	0	0	0	

Appendix Two

Appendix 2: Summary of mortuary database of Pulong Bakaw, Calatagan

Burial-No.	Type	Orientation	Age	Sex	Tooth-filing	EA	TC	MS	GG	Notes
PB-001	Common	NE (65°)	A	NA	NA	1	3	1	5	PB-001-a: T102-1 (China small plate); PB-001-b: E114-1 (KT-s-D4b); PB-001-c: T109-2 (China lid); PB-001-d: T100-2 (Chinese ware); PB-001-e: M111-5 (spindle whorl).
PB-002	Common	NE (65°)	A	NA	NA	2	3	1	6	PB-002-a: T112-100 (China BW plate, under skull); PB-002-b: T111-77 (Chinese BW small bowl); PB-002-c: E800-22 (unknown type); PB-002-d: E800-21 (unknown type); PB-002-e: M111-21 (spindle whorl, at left ankle); PB-002-f: T115-1 (Chinese BW jarlet).
PB-003	Common	NE (63°)	A	NA	NA	3	4	2	9	PB-003-a: E800-5 (unknown type); PB-003-b: T119-4 (Chinese BW small cup); PB-003-c: T112-4 (Chinese BW plate); PB-003-d: T111-4 (Chinese BW small bowl); PB-003-e: E800-88 (unknown type); PB-003-f: E800-55 (unknown type); PB-003-g: T111-14 (Chinese BW small bowl); PB-003-h: M120-21 (Chinese BW broken object); PB-003-i: M220-16 (brass object, type unknown).
PB-004	Common	NE (55°)	A	NA	NA	1	1	0	2	PB-004-a: E112-3 (KT-s-B); PB-004-b: T111-17 (Chinese BW small bowl).
PB-005	Common	NE (63°)	A	M	Y	2	2	0	4	PB-005-a: T111-1 (Chinese BW small bowl); PB-005-b: E800-1 (unknown type); PB-005-c: T111-17 (Chinese BW small bowl); PB-005-d: E800-17 (unknown type).
PB-006	Common	N (360°)	NA	NA	NA	0	1	1	2	PB-006-a: T900-NA (unknown type); PB-006-b: M900-NA (unknown type).

PB-007	Common	NE (60°)	C	NA	NA	2	2	0	4	PB-007-a: T131-55 (Chinese mono small bowl); PB-007-b: T205-100 (Thai small jarlet, under head); PB-007-c: E800-2 (unknown type); PB-007-d: E800-12 (unknown type).
PB-008	Common	NE (60°)	A	NA	NA	1	1	1	3	PB-008-a: T132-66 (Chinese monochrome plate); PB-008-b: E111-66 (KT-s-A); PB-008-c: M519-2 (stone object beside right shoulder).
PB-009	Common	NE (60°)	J	NA	NA	0	2	0	2	PB-009-a: T115-1 (Chinese BW jarlet); PB-009-b: T111-1 (Chinese BW small bowl).
PB-010	Common	NE (50°)	A	NA	Y	1	2	0	3	Two stones as grave markers at pelvis position. PB-010-a: T111-1 (Chinese BW bowl); PB-010-b: T112-77 (Chinese BW plate); PB-010-c: E800-17 (unknown type).
PB-011	Non-skeleton	NA	NA	NA	NA	1	1	0	2	There is no bone found. PB-011-a: T900-NA (unknown type trade ceramic); PB-011-b: E800-NA (unknown type earthenware).
PB-012	Common	E (85°)	J	NA	N	0	0	0	0	
PB-013	Common	NE (60°)	A	NA	NA	0	1	1	2	PB-013-a: T111-77 (Chinese BW small bowl); PB-013-b: M111-13 (spindle whorl).
PB-014	Disturbed	NE (63°)	A	NA	NA	1	0	0	1	Upper half of this burial was intruded and disturbed by PB-015. PB014-a: E800-NA (unknown type).
PB-015	Common	E (75°)	A	NA	NA	1	3	1	5	PB-015 intruded into PB-014. PB-015-a: T204-1 (Thai small jar); PB-015-b: T112-44 (Chinese BW plate); PB-015-c: T112-44 (Chinese BW small plate); PB-015-d: E111-33 (KT-s-A); PB-015-e: M111-NA (spindle whorl).

PB-016	Multiple Common	NE (45°)	J	NA	N	0	1	0	1	One extra skull (PB-016A) was at right side of the head. PB-016-a: T111-77 (Chinese BW small bowl).
PB-016A	Multiple Skull-only	NA	NA	NA	NA	0	0	0	0	PB-016A was placed at the right side of head of PB-016.
PB-017	Common	E (74°)	A	NA	Y	1	1	0	2	PB-017-a: T111-1 (Chinese BW bowl); PB-017-b: E800 –2 (unknown type).
PB-018	Common	NE (61°)	J	NA	N	1	1	0	2	PB-018-a: T111-22 (Chinese BW small bowl); PB-018-b: E112-3 (KT-s-B).
PB-019	Non-skeleton	NA	NA	NA	NA	2	1	0	3	There is no bone found. PB-019-a: T113-NA (Chinese BW-hb small saucer); PB-019-b: E800-NA (unknown type) PB-019-c: E111-NA (KT-s-A).
PB-020	Non-skeleton	NA	NA	NA	NA	0	1	0	1	There is no bone found. PB-020-a: T131-NA (Chinese monochrome bowl).
PB-021	Common	NE (60°)	C	NA	NA	2	2	0	4	PB-021-a: T113-19 (Chinese BW-hb saucer); PB-021-b: E800-16 (unknown type); PB-021-c: T110-77 (Chinese BW-hb ware); PB-021-d: E112-22 (KT-s-B).
PB-022	Common	N (360°)	A	NA	NA	1	2	0	3	PB-022-a: T111-4 (Chinese BW small bowl); PB-022-b: T144-4 (Chinese stoneware jar); PB-022-c: E111-21 (KT-s-A).
PB-023	Non-skeleton	NA	NA	NA	NA	2	2	1	5	There is no bone found. PB-023-a: T111-NA (Chinese BW small bowl as cover); PB-023-b: E800-NA (unknown type); PB-023-c: E112-NA (KT-s-B); PB-023-d: M215-NA (iron blade); PB-023-e: T204-NA (Thai small jar).

PB-024	Common	NE (65°)	A	NA	NA	1	0	0	1	PB-024-a: E800-22 (unknown type).
PB-025	Common	E (95°)	A	NA	NA	0	2	1	3	PB-025-a: T204-2 (Thai small jar); PB-025-b: T111-66 (Chinese BW bowl); PB-025-c: M111-13 (spindle whorl).
PB-026	Common	N (360°)	J	NA	NA	2	1	0	3	PB-026-a: T111-13 (Chinese BW bowl); PB-026-b: E800-12 (unknown type); PB-026-c: E800-1 (unknown type).
PB-027	Common	N (360°)	A	NA	NA	0	1	1	2	PB-027-a: T123-66 (Chinese WW saucer); PB-027-b: M111-99 (spindle whorl).
PB-028	Common	N (5°)	NA	NA	NA	0	0	0	0	
PB-029	Common	N (356°)	A	M	NA	0	0	0	0	
PB-030	Common	N (354°)	A	NA	NA	0	1	0	1	PB-030-a: T204-NA (Thai small jar).
PB-031	Semi-flexed	N (360°)	J	NA	N	0	0	1	1	Left toward (i.e. west) semi-flexed. PB-031-a: M111-NA (spindle whorl).
PB-032	Common	N (360°)	C	NA	NA	1	2	0	3	PB-032-a: T143-1 (Chinese monochrome saucer as cover); PB-032-b: E800-1 (unknown type); PB-032-c: T111-NA (Chinese BW bowl).
PB-033	Common	N (360°)	C	NA	NA	2	1	0	3	PB-033-a: T123-22 (Chinese WW saucer as cover); PB-033-b: E111-22 (KT-s-A); PB-033-c: E114-22 (KT-s-D2b).
PB-034	Common	N (3°)	C	NA	NA	0	0	0	0	

PB-035	Headless	N (15°)	A	NA	NA	2	2	2	6	PB-035-a: E116-20 (KT-s-I); PB-035-b: T901-66 (small bowl); PB-035-c: M111-44 (spindle whorl); PB-035-d: T901-20 (bowl, as cover of a); PB-035-e: M217-16 (iron slag, 16 cm); PB-035-f: E800-99 (unknown type).
PB-036	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. PB-036-a: E111-NA (KT-s-A).
PB-037	Common	N (360°)	C	NA	NA	1	2	0	3	PB-037-a: T112-NA (China BW plate); PB-037-b: T200-NA (Thai ware); PB-037-c: E112-NA (KT-s-B).
PB-038	Common	N (360°)	NA	NA	NA	0	0	0	0	
PB-039	Multiple Common	E (90°)	C	NA	N	1	2	0	3	PB-039/39A were buried together. PB-039-a: T112-66 (China BW plate); PB-039-b: T904-16 (unknown small jar); PB-039-c: E800-66 (unknown type).
PB-039A	Multiple Common	NA	I	NA	N	0	0	0	0	PB-039/39A were buried together.
PB-040	Common	E (90°)	C	NA	NA	1	0	0	1	PB-040-a: E111-13 (KT-s-A).
PB-041	Disturbed Bundle	NA	NA	NA	NA	0	0	0	0	There is skull (one hole on skull) and long bones only, re-burial?
PB-042	Common	N (360°)	A	NA	NA	2	0	0	2	PB-042-a: E134-12 (KT-i-D); PB-042-b: E114-2 (KT-s-D1a).
PB-043	Common	N (360°)	NA	NA	NA	0	0	0	0	

PB-044	Common	N (354°)	A	NA	NA	0	2	6	8	PB-044-a & b: M301-11 (glass bracelet on left wrist); PB-044-c: T111-13 (Chinese BW small bowl); PB-044-d: M301-10 (glass bracelet on right wrist); PB-044-e: T119-77 (Chinese BW cup); PB-044-f: M111-2 (spindle whorl); PB-044-g: M111-20 (spindle whorl); PB-044-h: M111-NA (spindle whorl).
PB-045	Common	N (360°)	A	NA	NA	0	0	0	0	
PB-046	Common	N (360°)	C	NA	NA	0	5	0	5	PB-046-a: T111-NA (Chinese BW bowl); PB-046-b: T112-NA (Chinese BW plate); PB-046-c: T112-NA (Chinese BW plate); PB-046-d: T111-NA (Chinese BW bowl); PB-046-e: T120-NA (China white ware).
PB-047	Multiple Common	E (90°)	A	NA	NA	2	1	1	4	One extra skull (PB-047A) was at around the head with other grave goods. PB-047-a: T112-1 (China BW-hb big plate); PB-047-b: E112-1 (KT-s-B); PB-047-c: E111-1 (KT-s-A); PB-047-d: M903-1 (bead).
PB-047A	Multiple Skull-only	NA	NA	NA	NA	0	0	0	0	PB-047A was an extra skull at around the head of PB-047, with other grave goods.
PB-048	Common	NE (35°)	A	NA	NA	0	0	0	0	
PB-049	Common	N (360°)	C	NA	N	2	3	8	13	PB-049-a: T140-3 (Chinese stoneware); PB-049-b: E800-3 (unknown type); PB-049-c: E800-99 (unknown type); PB-049-d: M111-88 (spindle whorl); PB-049-e, f, & g: M202-9 (metal bracelet); PB-049-h: M303-11 (9 glass beads at left wrist); PB-049-i: T112-66 (Chinese BW plate); PB-049-j: T115-66 (China BW jarlet with cover); PB-049-k & l: M200-66 (metal objects); PB-049-m: M111-13 (49-u: spindle whorl).

PB-050	Common	NA	NA	NA	NA	0	0	0	0	
PB-051	Multiple Semi-flexed	N (360°)	A	NA	Y	0	0	0	0	The skull faced right (i.e. the west). PB-051/52 were buried together.
PB-052	Multiple Common	N (360°)	A	NA	NA	0	0	1	1	PB-051/52 were buried together. PB-052's left hand crossed over right hand. PB-052-a: M430-66 (a hip of shells between legs).
PB-053	Common	NA	NA	NA	NA	1	0	0	1	PB-053-a: E111-1 (KT-s-A).
PB-054	Non-skeleton	NA	NA	NA	NA	0	1	0	1	There is no bone found. PB-054-a: T149-NA (Chinese stoneware teapot).
PB-055	Common	NE (45°)	A	NA	NA	1	0	0	1	PB-055-a: E111-2 (KT-s-A).
PB-056	Common	NE (45°)	A	NA	NA	1	0	1	2	PB-056-a: M303-77 (glass beads); PB-056-b: E111-22 (KT-s-A).
PB-057	Common	NE (45°)	J	NA	N	1	3	2	6	PB-057-a: M111-22 (spindle whorl); PB-057-b: T112-22 (Chinese BW plate); PB-057-c: T201-22 (Thai, bowl); PB-057-d: T204-22 (Thai jar); PB-057-e: E111-22 (KT-s-A); PB-057-f: M903-11 (14 beads on left wrist).
PB-058	Common	NE (45°)	C	NA	N	0	0	0	0	
PB-059	Common	NE (45°)	A	NA	NA	2	1	0	3	PB-059-a: T112-21 (China BW plate, as cover of 59-b); PB-059-b & c: E800-21 (unknown type).
PB-060	Common	NE (45°)	A	NA	NA	0	0	0	0	
PB-061	Common	NE (45°)	NA	NA	NA	1	0	0	1	PB-061-a: E800-4 (unknown type).

PB-062	Common	NE (45°)	A	NA	NA	0	0	0	0	
PB-063	Common	NE (45°)	A	NA	NA	2	1	3	6	PB-063 seemed to intrude into northwest part of PB-067. PB-063-a: E112-55 (KT-s-B); PB-063-b: E800-3 (unknown type); PB-063-c: M111-4 (spindle whorl); PB-063-d: M430-12 (unknown object); PB-063-e: T111-13 (China BW bowl, broken); PB-063-f: M510-12 (stone on right leg).
PB-064	Jar burial	N (360°)*	I	NA	N	1	4	0	5	PB-064-jar: T144 (Chinese stoneware jar as burial container); PB-064-a: T140 (China stoneware jar cover); PB-064-b: T102 (Chinese plate); PB-064-c: E800 (unknown type); PB-064-d: T204 (Thai small jar under burial jar); PB-064-e: T103 (Chinese saucer as cover of 64-e).
PB-065	Non-skeleton	NA	NA	NA	NA	2	0	0	2	There is no bone found. PB-065-a: E111-NA (KT-s-A); PB-065-b: E800-NA (type unknown).
PB-066	Common	NE (45°)	J	NA	NA	1	0	0	1	PB-066-a: E113-21 (KT-s-C).
PB-067	Disturbed	NA	NA	NA	NA	0	0	0	0	PB-067 seemed to be intruded by PB-063. There were only skull and left humerus left, beside left leg of PB-063.
PB-068	Common	N (360°)	C	NA	N	0	0	0	0	
PB-069	Common	E (75°)	NA	NA	NA	0	0	0	0	
PB-070	Common	NE (55°)	A	NA	NA	0	1	0	1	PB-070-a: T244-17 (Thai stoneware water jar).
PB-071	Common	E (75°)	A	NA	NA	1	1	0	2	PB-071-a: E111-22 (KT-s-A); PB-071-b: T112-22 (Chinese BW plate).

PB-072	Common	NE (60°)	J	NA	NA	1	2	1	4	PB-072-a: E113-NA (KT-s-C); PB-072-b: M111-NA (spindle whorl); PB-072-c: T119-NA (Chinese BW ware); PB-072-d: T209-NA (Thai ware).
PB-073	Common	E (70°)	C	NA	NA	3	1	1	5	PB-73 and PB-74 are side to side. PB-073-a: E111-2 (KT-s-A); PB-073-b: E112-2 (KT-s-B); PB-073-c: E111-2 (KT-s-A); PB-073-d: M903-NA (a bead); PB-073-e: T132-22 (Chinese monochrome plate).
PB-074	Common	E (70°)	C	NA	NA	1	0	1	2	PB-73 and PB-74 are side to side. PB-074-a: E800-1 (unknown type); PB-074-b: M111-5 (spindle whorl).
PB-075	Skull-only	NA	NA	NA	NA	0	0	0	0	PB-075 is very close to PB-073 and PB-074. Skull at upward position.
PB-076	Common	E (70°)	J	NA	NA	2	1	1	4	PB-076-a: T111-21 (Chinese BW bowl); PB-076-b & c: E111-21 (KT-s-A); PB-076-d: M111-13 (spindle whorl).
PB-077	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. PB-077-a: E800-NA (unknown type).
PB-078	Common	N (20°)	NA	NA	NA	0	1	0	1	PB-078-a: T111-NA (Chinese BW bowl).
PB-079	Skull-only	NA	A	NA	NA	0	1	0	1	Skull at upward position. PB-079-a: T112-NA (China BW plate).
PB-080	Non-skeleton	NA	NA	NA	NA	1	0	1	2	There is no bone found. PB-080-a: E800-NA (unknown type). PB-080-b: M205-NA (metal spear?).
PB-081	Non-skeleton	NA	NA	NA	NA	4	0	0	4	There is no bone found. PB-081-a: E111-NA (KT-s-A); PB-081-b: E113-NA (KT-s-C); PB-081-c: E112-NA (KT-s-B); PB-081-d: E111-NA (KT-s-A).

PB-082	Common	S (195°)	A	NA	Y	0	0	1	1	PB-082-a: M111-13 (spindle whorl).
PB-083	Common	S (180°)	A	NA	NA	0	0	0	0	
PB-084	Common	S (180°)	A	NA	NA	2	0	1	3	PB-084-a & b: E800-1 (unknown type); PB-084-c: M234-11 (copper ring on left hand).
PB-085	Common	NA	C	NA	NA	1	0	0	1	PB-085-a: E800-3 (unknown type).
PB-086	Non-skeleton	NA	NA	NA	NA	4	1	0	5	There is no bone found. PB-086-a: T111-NA (Chinese BW bowl); PB-086-b & C: E800-NA (unknown type); PB-086-d & e: E111-NA (KT-s-A).
PB-087	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. PB-087-a: E112-NA (KT-s-B).
PB-088	Common	NE (60°)	J	NA	NA	0	0	0	0	
PB-089	Jar burial	NA	I	NA	N	2	4	0	6	PB-089-jar: T144 (Chinese stoneware jar as burial container); PB-089-a, b, c & d: T101 (China small bowl); PB-089-e & f: E800 (unknown type).
PB-091	Common	E (90°)	A (20-25)	NA	Y	1	1	0	2	PB-091-a: E800-22 (unknown type); PB-091-b: T103-2 (China saucer).
PB-092	Common	E (90°)	A	NA	NA	0	1	0	1	PB-092-a: T111-4 (Chinese BW bowl).
PB-093	Common	E (90°)	C	NA	NA	0	0	0	0	
PB-094	Non-skeleton	NA	NA	NA	NA	1	1	0	2	There in no bone found. PB-094-a: E800-NA (unknown type); PB-094-b: T102-NA (Chinese plate)
PB-095	Common	E (100°)	A	NA	Y	2	0	0	2	PB-095-a: E111-16 (KT-s-A); PB-095-b: E800-5 (unknown type).

PB-096	Common	E (90°)	A	NA	NA	1	0	0	1	PB-096-a: E134-12 (KT-i-D)-.
PB-097	Non-skeleton	NA	NA	NA	NA	2	0	0	2	There in no bone found. PB-097-a: E111-NA (KT-s-A); PB-097-b: E112-NA (KT-s-B).
PB-098	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There in no bone found. PB-098-a: E800-NA (unknown type).
PB-099	Disturbed	N (15°)	A	NA	NA	0	0	0	0	
PB-100	Common	N (360°)	A	NA	N	0	0	0	0	
PB-101	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There in no bone found. PB-101-a: E111-NA (KT-s-A).
PB-103	Common	NA	NA	NA	NA	0	0	0	0	
PB-104	Common	E (105°)	A	NA	Y	1	5	1	7	PB-104-a: T204-1 (Thai small jar); PB-104-b: T112-77 (Chinese BW plate); PB-104-c: T131-66 (Chinese monochrome bowl); PB-104-d: M111-77 (spindle whorl); PB-104-e: T131-55 (Chinese monochrome bowl); PB-104-f: T131-16 (Chinese monochrome bowl); PB-104-g: E111-22 (KT-s-A).
PB-105	Non-skeleton	NA	NA	NA	NA	0	2	0	2	There is no bone found. PB-105-a: T133-NA (Chinese monochrome saucer); PB-105-b: T131-NA (Chinese monochrome bowl).
PB-106	Headless	E (90°)	A	NA	NA	0	0	0	0	
PB-107	Common	NE (45°)	A	NA	NA	0	0	0	0	
PB-108	Common	N (360°)	J	NA	NA	0	0	0	0	
PB-109	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. PB-109-a: E112-NA (KT-s-B).

PB-110	Semi-flexed	N (360°)	C (4-7)	NA	N	0	0	0	0	The skull faced right (i.e. the west).
PB-111	Semi-flexed	N (360°)	C (4-7)	NA	N	0	0	0	0	The skull faced left (i.e. the east).
PB-112	Common	NE (35°)	A	NA	NA	1	0	0	1	PB-112-a: E800-3 (unknown type).
PB-113	Common	NA	J	NA	NA	1	5	0	6	PB-113-a: T112-12 (China BW-hb plate); PB-113-b: T112-12 (Chinese BW-hb plate); PB-113-c: T205-12 (Thai jarlet); PB-113-d: T131-16 (Chinese monochrome bowl); PB-113-e: T144-16 (China stoneware jar); PB-113-f: E112-16 (KT-s-B).
PB-114	Common	E (90°)	A	NA	NA	1	0	1	2	PB-114-a: E800-5 (unknown type); PB-114-b: M111-88 (spindle whorl).
PB-115	Common	NE (35°)	A	NA	NA	2	4	1	7	PB-115-a: T101-13 (Chinese bowl); PB-115-b: T112-77 (Chinese BW big plate); PB-115-c: T112-14 (Chinese small plate); PB-115-d: T101-14 (Chinese bowl); PB-115-e: E113-20 (KT-s-C); PB-115-f: E111-15 (KT-s-A); PB-115-g: M111-15 (spindle whorl).
PB-116	Common	NE (35°)	NA	NA	NA	0	3	0	3	PB-116-a: T131-4 (Chinese monochrome bowl); PB-116-b: T129-22 (Chinese WW cup); PB-116-c: T205-22 (Thai jarlet).
PB-117	Common	NA	A	NA	NA	0	0	0	0	PB-117's legs crossed at feet.
PB-118	Non-skeleton	NA	NA	NA	NA	1	2	0	3	There is no bone found. PB-118-a & b: T131-NA (Chinese monochrome bowl); PB-118-c: E114-NA (KT-s-D1b).

PB-119	Common	N (340°)	A	NA	NA	1	0	1	2	PB-119-a: E111-13 (KT-s-A); PB-119-b: M111-13 (spindle whorl).
PB-120	Common	NE (55°)	A	NA	NA	0	0	0	0	PB-120/121 are side by side.
PB-121	Headless	SW (235°)	A	NA	NA	0	1	1	2	PB-120/121 are side by side. PB-121-a: T131-3 (Chinese monochrome bowl); PB-121-b: M111-NA (spindle whorl).
PB-122	Common	E (90°)	A	NA	NA	0	0	0	0	
PB-123	Common	E (90°)	A	NA	Y	1	7	4	12	PB-123-a to g and k were all placed together near the skull. PB-123-a & b: M220-1 (brass lock); PB-123-c: T105-1 (Chinese jarlet); PB-123-d: T104-1 (Chinese jar); PB-123-e: T101-1 (Chinese bowl); PB-123-f: M229-1 (brass lock); PB-123-g: T102-1 (Chinese plate); PB-123-h: M210-1 (iron object, under 123-g); PB-123-i: T100-14 (Chinese ware); PB-123-j: T101-15 (Chinese bowl); PB-123-k: T101-1 (Chinese bowl, as cover of 123-d); PB-123-l: E111-21 (KT-s-A).
PB-124	Common	NA	C	NA	NA	1	4	0	5	PB-124-a: T102-99 (Chinese plate); PB-124-b: T100-9 (Chinese ware); PB-124-c: T100-13 (Chinese ware); PB-124-d: T100-77 (Chinese ware); PB-124-e: E800-1 (unknown type).
PB-125	Common	NE (40°)	A	NA	Y	0	0	0	0	
PB-126	Common	NE (35°)	A	NA	Y	3	1	0	4	PB-126-a: T112-99 (Chinese BW big plate); PB-126-b: E111-22 (KT-s-A); PB-126-c: E113-1 (KT-s-C); PB-126-d: E800-1 (unknown type).

PB-127	Common	N (360°)	A	NA	NA	0	0	0	0	
PB-128	Common	N (360°)	A	NA	Y	2	1	0	3	PB-128-a: T111-22 (Chinese BW bowl); PB-128-b: E121-22 (KT-p-A1); PB-128-c: E800-20 (unknown type).
PB-129	Common	N (360°)	A	NA	NA	2	1	0	3	PB-129-a: T112-100 (Chinese BW plate); PB-129-b: E112-2 (KT-s-B); PB-129-c: E800-1 (unknown type).
PB-130	Common	NE (45°)	A	NA	NA	0	0	1	1	PB-130-a: M301-99 (a broken glass bracelet on chest).
PB-131	Non-skeleton	NA	NA	NA	NA	0	1	0	1	There is no bone found. PB-131-a: T111-NA (Chinese BW bowl).
PB-132	Non-skeleton	NA	NA	NA	NA	2	0	0	2	There is no bone found. PB-132-a: E114-NA (KT-s-D1a); PB-132-b: E111-NA (KT-s-A).
PB-133	Common	NA	A	NA	Y	3	7	1	11	PB-133-a: T101-3 (Chinese large bowl); PB-133-b: T101-1 (Chinese bowl); PB-133-c: E112-1 (KT-s-B); PB-133-d: T101-2 (Chinese bowl); PB-133-e: T134-2 (Chinese monochrome small jar); PB-133-f: T102-77 (Chinese big plate); PB-133-g: T101-12 (Chinese bowl); PB-133-h: T101-20 (Chinese bowl); PB-133-i: E800-10 (unknown type); PB-133-j: E800-8 (unknown type); PB-133-k: M210-88 (iron object).
PB-134	Common	NE (25°)	C	NA	NA	1	0	0	1	PB-134-a: E800-17 (unknown type).
PB-135	Common	E (100°)	A	NA	Y	2	0	0	2	PB-135 intruded into PB-136, which was at the feet of PB-135. PB-135-a: E800-1 (unknown type); PB-135-b: E111-1 (KT-s-A).

PB-136	Disturbed	NE (40°)	C	NA	NA	1	2	0	3	PB-135 intruded into PB-136, which was at the feet of PB-135. Skull was placed beside lower limbs. PB-136-a: T101-12 (Chinese bowl); PB-136-b: T101-13 (Chinese bowl); PB-136-c: E113-12 (KT-s-C, above skull).
PB-137	Common	NE (65°)	A	NA	NA	1	1	0	2	PB-137-a: T112-77 (Chinese BW plate); PB-137-b: E112-3 (KT-s-B).
PB-138	Jar burial	N (360°)	I	NA	N	0	0	0	0	PB-138-jar: T144 (Chinese stoneware jar as burial container. No cover used).
PB-139	Common	NE (35°)	C (6-7)	NA	N	0	0	0	0	
PB-140	Common	NE (25°)	A	NA	Y (6U?L)	0	0	0	0	
PB-141	Non-skeleton	NA	NA	NA	NA	1	0	1	2	There is no bone found. PB-141-a: E800-NA (unknown type); PB-141-b: M430-NA (one large shell).
PB-142	Multiple Common	NE (25°)	A	NA	Y (8U6L)	2	5	0	7	PB-142/143 were buried together. PB-043 was a infant buried beside PB-042's left leg. PB-142 intruded into PB-144 from the middle of PB-144's skeleton. PB-142-a: E800-17 (unknown type); PB-142-b: T113-17 (Chinese BW saucer); PB-142-c: T115-17 (China BW jarlet); PB-142-d: T111-17 (Chinese BW bowl); PB-142-e: T112-21 (Chinese BW plate); PB-142-f: T111-16 (Chinese BW bowl as cover of 142g); PB-142-g: E112-16 (KT-s-B).
PB-143	Multiple Semi-flexed	NE (25°)	I	NA	N	0	0	0	0	The skull faced right (i.e. northwest). PB-142/143 were buried together. PB-043 was buried beside PB-042's left leg.f
PB-144	Disturbed Intruded	E (100°)	A	NA	NA	0	1	0	1	PB-142 intruded into PB-144 from the middle of PB-144's skeleton. PB-144-a: T119-17 (Chinese BW dish).
PB-145	Common	N (15°)	A	NA	Y	2	2	0	4	PB-145-a: T111-44 (Chinese BW bowl); PB-145-b: T111-66 (Chinese BW bowl); PB-145-c & d: E800-22 (unknown type).

PB-146	Non-skeleton	NA	NA	NA	NA	1	1	0	2	There is no bone found. PB-146-a: E112-NA (KT-s-B); PB-146-b: T111-NA (Chinese BW bowl).
PB-147	Common	NE (60°)	C	NA	NA	3	2	0	5	PB-147-a: T111-17 (Chinese BW bowl); PB-147-b: E800-21 (unknown type); PB-147-c: E111-20 (KT-s-A); PB-147-d: E113-1 (KT-s-C); PB-147-e: T204-21 (Thai small jar).
PB-148	Common	NE (25°)	A	NA	N	2	2	1	5	PB-148-a: E800-1 (unknown type); PB-148-b: T205-3 (Thai small jar); PB-148-c: E111-22 (KT-s-A); PB-148-d: T111-2 (Chinese BW bowl); PB-148-e: M111-2 (spindle whorl).
PB-149	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. PB-149-a: E800-NA (unknown type).
PB-150	Common	NE (30°)	A	NA	NA	2	1	0	3	PB-150-a: E111-22 (KT-s-A); PB-150-b: T111-22 (Chinese BW-hb bowl as cover of a); PB-150-c: E800-1 (unknown type).
PB-151	Common	NE (45°)	A	NA	Y	1	2	0	3	PB-151-a: E800-3 (unknown type); PB-151-b: T304-77 (Vietnamese small jar); PB-151-c: T112-22 (Chinese BW plate).
PB-152	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. PB-152-a: E800-NA (unknown type).
PB-153	Multiple Common	NE (30°)	A	M	Y (10U8L)	0	0	0	0	PB-153/154 were buried together.
PB-154	Multiple Common	NE (30°)	C	NA	N	0	0	0	0	PB-153/154 were buried together. PB-154 was a child on the right side of PB-153.
PB-155	Common	E (90°)	A	NA	Y	2	1	0	3	PB-155-a: E800-2 (unknown type); PB-155-b: E111-1 (KT-s-A); PB-155-c: T111-44 (Chinese BW bowl).
PB-156	Common	S (180°)	A	NA	Y (6U?L)	2	0	1	3	PB-156-a: E800-1 (unknown type); PB-156-b: E800-14 (unknown type); PB-156-c: M111-99 (spindle whorl).

PB-157	Common	NA	NA	NA	NA	0	2	0	2	PB-157-a & b: T209-NA (Thai jar cover); .
PB-158	Common	NA	NA	NA	NA	2	1	0	3	PB-158-a: T112-NA (Chinese BW plate); PB-158-b & c: E111-NA (KT-s-A).
PB-159	Common	NA	C	NA	NA	1	0	0	1	PB-159-a: E800-5 (unknown type).
PB-160	Common	NE (60°)	C	NA	NA	1	0	1	2	PB-160-a: M111-88 (spindle whorl); PB-160-b: E800-16 (unknown type).
PB-161	Common	NE (60°)	J	NA	NA	1	0	2	3	PB-161-a: E800-99 (unknown type); PB-161-b: M111-13 (spindle whorl); PB-161-c: M303-99 (9 Beads, as a string).
PB-162	Common	NE (60°)	A	NA	NA	2	0	0	2	PB-162-a & b: E800-NA (unknown type).
PB-163	Common	NE (60°)	A	NA	Y	3	4	1	8	PB-163-a: T111-2 (Chinese BW bowl as cover of 163-b); PB-163-b: E800-2 (unknown type); PB-163-c: T112-1 (Chinese BW plate); PB-163-d: M111-99 (spindle whorl); PB-163-e & f: T111-77 (Chinese BW bowl); PB-163-g: E800-44 (unknown type); PB-163-h: E800-22 (unknown type).
PB-164	Common	NE (65°)	A	NA	Y	1	0	0	1	PB-164-a: E111-21 (KT-s-A).
PB-165	Common	NE (35°)	J (14-16)	NA	N	2	1	0	3	PB-165-a: T204-1 (Thai small jar); PB-165-b: E800-4 (unknown type); PB-165-c: E134-22 (KT-i-D).
PB-166	Common	NA	J	NA	N	2	2	0	4	PB-166-a: E112-1 (KT-s-B); PB-166-b: T301-2 (Vietnamese bowl); PB-166-c: T112-NA (Chinese BW plate); PB-166-d: E800-NA (unknown type).

PB-167	Common	NE (55°)	J	NA	NA	1	3	0	4	PB-167-a: T204-1 (Thai small jar); PB-167-b: T111-77 (Chinese BW bowl); PB-167-c: T111-66 (Chinese BW bowl); PB-167-d: E800-55 (unknown type).
PB-168	Common	NE (55°)	J	NA	NA	1	0	0	1	PB-168-a: E111-99 (KT-s-A).
PB-169	Common	NE (55°)	A	NA	NA	3	0	0	3	PB-169-a & b: E111-22 (KT-s-A); PB-169-c: E112-2 (KT-s-B).
PB-170	Multiple Common	NE (55°)	C	NA	N	1	0	0	1	PB-170/171 were buried together. PB-171 was beside the left leg of PB-170. PB-170-a: E111-1 (KT-s-A).
PB-171	Multiple Common	NE (55°)	I	NA	N	0	0	0	0	PB-170/171 were buried together. PB-171 was beside the left leg of PB-170.
PB-172	Common	NE (55°)	J	NA	N	0	0	0	0	PB-172 intruded into PB-173 at the northeast corner, only slightly influenced part of the skull of PB-173.
PB-173	Common	NE (55°)	J	NA	N	0	1	0	1	PB-172 intruded into PB-173 at the northeast corner, only slightly influenced part of the skull of PB-173. PB-173-a: T113-66 (Chinese BW-hb saucer).
PB-174	Common	NE (55°)	C	NA	N	2	1	0	3	PB-174-a: E114-1 (KT-s-D2b); PB-174-b: T112-77 (Chinese BW plate); PB-174-c: E800-8 (unknown type).
PB-175	Common	NE (55°)	A	NA	Y	2	4	2	8	PB-175-a: E113-22 (KT-s-C); PB-175-b: T905-22 (jarlet); PB-175-c: T145-22 (Chinese stoneware big jar); PB-175-d: E800-22 (unknown type); PB-175-e: T111-44 (Chinese BW bowl); PB-175-f: T905-55 (small jar); PB-175-g: M111-4 (spindle whorl); PB-175-h: M215-NA (iron spear).
PB-176	Common	NE (55°)	A	NA	NA	2	0	0	2	PB-176-a: E121-1 (KT-p-A); PB-176-b: E800-1 (unknown type).

PB-177	Common	S (180°)	J	NA	NA	0	1	0	1	PB-177-a: T110-5 (Chinese BW-hb).
PB-178	Non-skeleton	NA	NA	NA	NA	2	0	0	2	There is no bone found. PB-178-a & b: E111-NA (KT-s-A).
PB-179	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. PB-179-a: E800-NA (unknown type).
PB-180	Common	NA	NA	NA	NA	0	0	0	0	
PB-181	Common	NE (30°)	J	NA	N	1	0	0	1	PB-181-a: E113-3 (KT-s-C).
PB-182	Common	N (360°)	C	NA	N	0	1	0	1	PB-182-a: T225-66 (Thai white glaze small jar).
PB-183	Common	NE (45°)	A	NA	N	1	1	0	2	PB-183-a: T113-99 (Chinese BW-hb saucer inside 183-b); PB-183-b: E111-99 (KT-s-A).
PB-184	Common	N (15°)	A	NA	Y (6U6L)	2	5	1	8	PB-184-a: T103-10 (Chinese saucer); PB-184-b: T103-11 (Chinese saucer); PB-184-c: E800-12 (unknown type); PB-184-d: T102-44 (Chinese plate); PB-184-e: T103-21 (Chinese saucer as cover of 184-g); PB-184-f: E112-21 (KT-s-B); PB-184-g: T144-21 (Chinese stoneware jar); PB-184-h: M243-17 (bead, gold?).
PB-185	Headless	NE (30°)	A	NA	NA	1	1	0	2	PB-185-a: T204-22 (Thai small jar); PB-185-b: E800-22 (unknown type).
PB-186	Common	NE (30°)	A	NA	Y (8U6L)	1	1	0	2	PB-186-a: E114-4 (KT-s-D1d); PB-186-b: T131-22 (Chinese monochrome bowl).
PB-187	Common	NA	J	NA	N	0	0	0	0	There was a hole on skull.

PB-188	Common	NA	NA	NA	NA	1	1	0	2	PB-188-a: E800-NA (unknown type); PB-188-b: T112-NA (Chinese BW plate).
PB-189	Common	N (360°)	C	NA	N	0	3	0	3	PB-189-a: T144-1 (Chinese stoneware jar); PB-189-b: T101-1 (Chinese bowl as cover of 189-a); PB-189-c: T101-22 (Chinese bowl).
PB-190	Common	E (70°)	A	NA	NA	1	2	0	3	PB-190-a: T204-3 (Thai small jar); PB-190-b: T162-55 (Chinese over-glazed plate); PB-190-c: E111-20 (KT-s-A).
PB-191	Semi-flexed	E (90°)	A	NA	NA	1	5	2	8	The skull faced right (i.e. the north). PB-191-a: T112-99 (Chinese BW plate); PB-191-b: T111-11 (Chinese BW bowl); PB-191-c: T111-10 (Chinese BW bowl); PB-191-d: T111-22 (Chinese BW bowl); PB-191-e: E800-20 (unknown type); PB-191-f: M120-20 (broken porcelain sherd); PB-191-g: T200-20 (Thai ware); PB-191-h: M219-22 (iron item).
PB-192	Common	E (70°)	A	NA	NA	1	0	1	2	PB-192-a: E800-5 (unknown type); PB-192-b: M512-NA (stone tool).
PB-193	Semi-flexed	NA	J	NA	N	0	0	0	0	
PB-194	Common	NA	NA	NA	NA	0	0	0	0	
PB-195	Common	N (340°)	C	NA	NA	0	0	0	0	
PB-196	Common	NA	NA	NA	NA	3	1	0	4	PB-196-a: E111-NA (KT-s-A); PB-196-b: T113-NA (Chinese BW saucer); PB-196-c: E112-NA (KT-s-B); PB-196-d: E111-NA (KT-s-A).
PB-197	Common	NE (60°)	J	NA	N	2	0	0	2	PB-197-a: E800-2 (unknown type); PB-197-b: E800-22 (unknown type).

PB-198	Common	NE (60°)	A	NA	Y	3	2	1	6	PB-198-a: E800-5 (unknown type); PB-198-b: T101-12 (Chinese bowl); PB-198-c: T101-66 (Chinese bowl); PB-198-d: E800-22 (unknown type); PB-198-e: E129-22 (KT-p-lid2); PB-198-f: M430-77 (one large shell placed at pelvis).
PB-199	Common	NA	NA	NA	NA	3	0	0	3	PB-199-a, b, & c: E800-NA (unknown type).
PB-200	Common	N (345°)	A	NA	Y	0	0	0	0	
PB-201	Common	NE (55°)	A	NA	NA	1	0	0	1	PB-201-a: E113-3 (KT-s-C).
PB-202	Common	NA	NA	NA	NA	2	0	0	2	PB-202-a & b: E800-NA (unknown type).
PB-203	Common	NE (55°)	C (5-10)	NA	N	2	1	0	3	PB-203-a: E800-1 (unknown type); PB-203-b: E112-1 (KT-s-B); PB-203-c: T130-99 (Chinese celedon).
PB-204	Jar burial	NA	I	NA	N	0	0	0	0	PB-204-jar: T144 (Chinese stoneware jar as burial container, no cover used).
PB-205	Non-skeleton	NA	NA	NA	NA	1	1	0	2	There is no bone found. PB-205-a: E112-NA (big KT-s-B); PB-205-b: T111-NA (Chinese BW bowl).
PB-206	Common	E (80°)	A	NA	NA	2	3	1	6	PB-206-a: T111-1 (Chinese BW bowl as cover of 206-b); PB-206-b: E800-1 (unknown type); PB-206-c: T111-22 (Chinese BW bowl); PB-206-d: E113-22 (KT-s-C); PB-206-e: T114-22 (Chinese BW jar); PB-206-f: M111-22 (spindle whorl).

PB-207	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. PB-207-a: E800-NA (unknown type)
PB-208	Common	NE (70°)	A	NA	NA	2	1	0	3	PB-208-a: T111-22 (Chinese BW bowl); PB-208-b: E111-22 (KT-s-A); PB-208-c: E112-22 (KT-s-B).
PB-209	Common	NE (75°)	A	NA	Y	0	4	0	4	PB-209-a: T904-1 (small jar); PB-209-b: T901-66 (bowl); PB-209-c: T204-21 (Thai jar); PB-209-d: T901-21 (bowl).

Appendix Three

Appendix 3: Summary of mortuary database of Karitunan, Calatagan

Burial-No.	Type	Orientation	Age	Sex	Tooth-filing	EA	TC	MS	GG	Notes
KR-001	Common	S (200°)	J	NA	NA	2	0	0	2	KR-001-a: E803-NA (Kinalabasa type); KR-001-b: E800-NA (type unknown).
KR-002	Common	S (200°)	A	NA	NA	0	2	0	2	KR-002-a: T291-77 (Thai blue glazed bowl, inverted on the pelvis); KR-002-b: T231-12 (Thai green glaze bowl, inverted at right of leg).
KR-003	Common	NE (30°)	A (Y)	NA	NA	0	0	1	1	KR-003-a: M111-77 (spindle whorl, on right of pelvis).
KR-004	Common	NE (30°)	A	NA	NA	1	2	0	3	KR-004-a: T231-77 (Thai green bowl, on right of hip); KR-004-b: T291-12 (Thai yellow bowl, to right of leg); KR-004-c: E800-13 (type unknown, to left of leg).
KR-005	Common	W (260°)	A	NA	NA	1	2	0	3	KR-005-a: T300-NA (Vietnamese ware); KR-005-b: T201-NA (Thai bowl); KR-005-c: E801-NA (Ordinary type).
KR-006	Common	NA	NA	NA	NA	0	2	0	2	KR-006-a: T102-NA (plate); KR-006-b: T101-NA (bowl).
KR-007	Common	N (20°)	A	NA	NA	0	2	0	2	KR-007-a: T112-NA (BW plate); KR-007-b: T340-NA (Vietnamese Stoneware).
KR-008	Common	SE (120°)	C	NA	NA	1	0	0	1	KR-008-a: E801-22 (Ordinary type, at feet).
KR-009	Common	N (20°)	A (Y)	NA	NA	0	2	0	2	KR-009-a: T231-NA (Thai green bowl); KR-009-b: T102-NA (plate).
KR-010	Common	SE (120°)	A (O)	NA	NA	0	0	0	0	
KR-011	Common	NE (20°)	A	NA	NA	0	1	1	2	KR-011-a: T231-12 (Thai green bowl, inverted at right leg); KR-011-b: M903-12 (beads, around upper legs).
KR-012	Common	NE (20°)	A	NA	Y	0	1	0	1	KR-012-a: T291-66 (Thai grey green bowl, between legs).

KR-013	Common	S (200°)	C	NA	NA	0	1	0	1	KR-013-a: T291-77 (Thai grey green bowl, inverted on pelvis).
KR-014	Common	S (200°)	A	NA	NA	1	4	1	6	KR-014-a: T112-77 (BW plate, inverted on pelvis); KR-014-b: T231-44 (Thai green bowl, between lower legs); KR-014-c: T291-44 (Thai yellow green bowl, between lower legs); KR-014-d: T205-3 (Thai jarlet, on left shoulder); KR-014-e: M111-5 (spindle whorl, by left upper arm); KR-014-f: E804-12 (kendi type, to the right of hip).
KR-015	Common	S (180°)	A	NA	NA	0	0	0	0	
KR-016	Common	NA	A (O)	NA	NA	0	0	0	0	
KR-017	Semi-flexed	SE (130°)	A	NA	Y (6U6L)	0	0	0	0	The skull faced left (i.e. the southwest).
KR-018	Multiple Bundle	NA	NA	NA	NA	0	0	0	0	There were at least two individuals.
KR-019	Common	N (16°)	A	NA	NA	0	3	3	6	KR-019-a: T131-10 (monochrome bowl, on right palm); KR-019-b: T133-77 (monochrome saucer, on pelvis); KR-019-c: T131-11 (monochrome bowl, on left palm); KR-019-d: M301-11 (yellow glass bracelet at left wrist); KR-019-e: M111-9 (spindle whorl, by left lower arm); KR-019-f: M301-10 (yellow glass bracelet at right wrist).
KR-020	Common	NW (330°)	C	NA	NA	0	1	0	1	KR-020-a: T103-100 (saucer, inverted on skull).
KR-021	Non-skeleton	NA	NA	NA	NA	1	0	2	3	There is no bone found. KR-021-a: M430-NA (a large shell); KR-021-b: E800-NA (unknown earthenware, broken); KR-021-c: M900-NA (burned wood tool?).

KR-022	Semi-flexed	NE (40°)	A	NA	NA	0	0	0	0	The skull faced right (i.e. the northwest).
KR-023	Non-skeleton	NA	NA	NA	NA	1	4	0	5	There is no bone found. KR-023-a: T101-NA (bowl); KR-023-b: T144-NA (stoneware jar); KR-023-c: T123-NA (white ware saucer); KR-023-d: T101-NA (bowl); KR-023-e: E800-NA (unknown type earthenware pot).
KR-024	Common	N (340°)	A	NA	NA	0	0	0	0	
KR-025	Common	S (193°)	C	NA	NA	0	2	1	3	KR-025-a: T132-99 (monochrome plate, on left chest); KR-025-b: T145-55 (brown jarlet, on knees); KR-025-c: M410-NA (burned charcoal bone).
KR-026	Common	SE (142°)	NA	NA	NA	0	0	1	1	KR-026-a: M410-NA (bone).
KR-027	Common	N (20°)	A (O)	NA	NA	0	0	0	0	
KR-028	Common	N (20°)	NA	NA	NA	1	0	0	1	KR-028-a: E801-4 (Ordinary type, at right of skeleton).
KR-029	Semi-flexed	E (90°)	A	NA	NA	0	0	0	0	The skull faced right (i.e. the north).
KR-030	Disturbed Bundle	NA	NA	NA	NA	0	2	0	2	KR-030-a: T201-NA (Thai bowl); KR-030-b: T131-NA (monochrome bowl).
KR-031	Common	NE (30°)	A	NA	NA	0	3	0	3	KR-031-a: T121-5 (white bowl, to the left of skeleton); KR-031-b & c: T131-66 (monochrome bowl, inverted on upper legs).
KR-032	Common	SW (205°)	A	NA	NA	2	0	0	2	KR-032-a: E801-4 (Ordinary type, to the right of skeleton); KR-032-b: E801-16 (Ordinary type, by right lower leg).

KR-033	Common	S (166°)	A	F	Y (4U4L)	2	2	1	5	KR-033-a: E801-4 (Ordinary type, by right of skeleton); KR-033-b: T111-10 (BW bowl, on right palm); KR-033-c: T111-11 (BW bowl, on left palm); KR-033-d: M111-55 (spindle whorl, between knees); KR-033-e: E801-NA (Ordinary type).
KR-034	Common	S (180°)	NA	NA	NA	0	0	0	0	
KR-035	Common	SE (145°)	A	NA	NA	0	4	1	5	KR-035-a: T144-21 (stoneware jar, away from left foot); KR-035-b: T131-21 (celedon bowl, away from left foot); KR-035-c: T201-NA (Thai bowl); KR-035-d: T105-NA (jarlet); KR-035-e: M205-NA (spear).
KR-036	Common	NE (35°)	NA	NA	NA	0	0	0	0	
KR-037	Common	SE (145°)	A	NA	NA	0	0	0	0	
KR-038	Semi-flexed	N (10°)	A	NA	NA	0	0	0	0	The skull faced left (i.e. the east).
KR-039	Common	SE (155°)	A	NA	NA	1	1	1	3	KR-039-a: E801-21 (Ordinary type, by left foot); KR-039-b: T201-22 (Thai bowl, around left foot); KR-039-c: M111-13 (spindle whorl, by the left upper leg).
KR-041	Common	NA	I	NA	NA	0	0	0	0	Skeleton buried among lots of lime stones and earthenware sherd.
KR-042	Common	SW (212°)	A	NA	NA	0	1	3	4	KR-042 intruded into KR-043 from the south, i.e. the upper par of KR-043. KR-042-a: T205-2 (Thai jarlet, close to right shoulder); KR-042-b: M301-10 (green glass bracelet, on right wrist); KR-042-c: M301-10 (green glass bracelet, on right wrist); KR-042-d: M303-5 (2 green glass beads, by left arm).

KR-043A	Disturbed Multiple Headless	SW (205°)	A	NA	NA	0	0	3	3	This skeleton was headless, but a skull was placed between legs. Because this grave was intruded by KR-042, it seemed possible the skull was belong to the skeleton. KR-043-a: M523-13 (carnelian bead, by the left upper leg); KR-043-b: M301-11 (green glass bracelet, on left wrist); KR-043-c: M301-10 (blue glass bracelet, on right wrist).
KR-043B	Disturbed Multiple Skull-only	NA	A	NA	NA	0	0	0	0	This skull was at the legs of KR-043A.
KR-044	Common	S (197°)	C	NA	NA	0	3	2	5	KR-044-a: T132-100 (celedon plate, inverted on skull); KR-044-b: M111-100 (spindle whorl, under 044-a); KR-044-c: T201-11 (Thai bowl, on left wrist); KR-044-d: M211-11 (iron bracelet, at left wrist); KR-044-e: T201-99 (Thai bowl, inverted on right chest near shoulder).
KR-045	Common	SW (223°)	A	NA	NA	1	2	0	3	KR-045-a: T144-22 (stoneware jar, away from feet); KR-045-b: E801-1 (Ordinary type, close to skull); KR-045-c: T204-NA (Thai jar).
KR-046	Common	W (250°)	C	NA	NA	1	0	0	1	KR-046-a: E801-5 (Ordinary type, to the left of skeleton).
KR-047	Common	NE (30°)	A	NA	NA	0	2	1	3	KR-047-a: T202-22 (Thai plate, inverted near feet); KR-047-b: T203-66 (Thai saucer, inverted between upper legs); KR-047-c: M111-2 (spindle whorl, beside right of skull).
KR-048	Headless	NE (30°)	A	NA	NA	0	2	0	2	KR-048-a: T132-77 (monochrome plate, inverted on pelvis); KR-048-b: T201-8 (Thai bowl, by the right lower arm).
KR-049	Common	N (360°)	I	NA	NA	1	1	0	2	KR-049-a: E800-22 (type unknown, away from the feet); KR-049-b: T201-22 (Thai bowl, cover of 049-a).

KR-050	Common	SE (155°)	A	NA	NA	3	5	4	12	KR-050-a: T112-77 (BW plate, inverted on pelvis); KR-050-b: T111-10 (BW bowl, on right palm); KR-050-c: M215-8 (iron blade, by right arm and pelvis); KR-050-d: M245-11 (gold ring, on left hand finger); KR-050-e: M519-3 (stone charm, by left shoulder); KR-050-f: T105-3 (jarlet, by left shoulder); KR-050-g: M903-3 (6 beads, by left shoulder); KR-050-h: T123-3 (white ware saucer, by left shoulder); KR-050-i, j, & k: E801-3 (Ordinary type, left of skull); KR-050-l: T205-3 (Thai jarlet, near left of skull).
KR-051	Common	SW (210°)	A	NA	NA	1	1	1	3	KR-051-a: T105-3 (jarlet, near left shoulder); KR-051-b: E800-21 (type unknown, near left foot); KR-051-c: M111-6 (spindle whorl, by the right elbow).
KR-052	Common	SE (155°)	A	NA	NA	0	2	0	2	KR-052-a: T201-10 (Thai bowl, inverted on right palm); KR-052-b: T201-11 (Thai bowl, inverted on left palm).
KR-053	Common	NE (30°)	NA	NA	NA	0	0	0	0	
KR-054	Non-skeleton	NA	NA	NA	NA	2	1	0	3	There is no bone found. KR-054-a: T111-NA (BW bowl); KR-054-b & c: E800-NA (unknown type).
KR-055	Common	SW (210°)	A	NA	NA	0	0	0	0	
KR-056	Common	N (22°)	J	NA	NA	1	0	0	1	KR-056-a: E808-33 (imitation saucer, cover on feet).
KR-057	Common	SW (205°)	J	NA	NA	0	0	0	0	
KR-058	Common	E (100°)	A	NA	NA	1	0	0	1	KR-058-a: E808-22 (imitation plate, near feet).
KR-059	Common	SW (208°)	J	NA	NA	1	4	0	5	KR-059-a: T144-2 (stoneware jar, near right of skull); KR-059-b: E804-12 (kendi type, near right upper leg); KR-059-c: T132-77 (celedon plate, inverted on pelvis); KR-059-d: T201-11 (Thai bowl, on left palm); KR-059-e: T201-10 (Thai bowl, on right palm).

KR-060	Common	N (20°)	A (O)	NA	NA	1	1	0	2	KR-060-a: E800-22 (type unknown, near feet); KR-060-b: T133-100 (monochrome saucer, inverted left half of skull).
KR-061	Common	S (195°)	C	NA	NA	0	0	0	0	
KR-062A	Multiple Common	SW (225°)	A	NA	NA	1	1	0	2	KR-062A/062B were buried together. KR-062A-a: E800-3 (type unknown, near left of skull); KR-062A-b: T145-NA (stoneware jarlet).
KR-062B	Multiple Semi-flexed	NA	NA	NA	NA	0	0	0	0	KR-062A/062B were buried together.
KR-063	Disturbed Bundle	NA	NA	NA	NA	0	1	0	1	It is difficult to determine how many individuals here. KR-063-a: T113-NA (BW saucer)
KR-064	Common	W (270°)	A	NA	NA	0	0	0	0	
KR-065	Common	SE (150°)	C	NA	NA	0	0	0	0	
KR-066	Common	S (160°)	A	NA	NA	1	0	0	1	KR-066-a: E800-3 (type unknown, to the left of skeleton).
KR-067	Common	N (360°)	A	NA	NA	1	0	2	3	KR-067-a: M111-14 (spindle whorl, by the right knee); KR-067-b: E800-22 (type unknown, near the feet); KR-067-c: M410-2 (animal bone, near right of skeleton).
KR-068	Common	S (200°)	A	NA	NA	2	3	6	11	KR-068-a: T145-22 (stoneware jarlet, away from feet); KR-068-b: E801-22 (Ordinary type, away from feet); KR-068-c: T144-22 (stoneware jar, away from feet); KR-068-d: E801-33 (Ordinary type, on feet); KR-068-e/f/g: M301-10 (blue glass bracelet, on right wrist); KR-068-h/i/j: M301-11 (blue glass bracelet, on left wrist); KR-068-k: T135-1 (monochrome jarlet, away from skull).
KR-069	Common	S (200°)	A	NA	NA	1	2	0	3	KR-069-a: T115-3 (BW jarlet, away from left of skeleton); KR-069-b: T101-1 (bowl, as cover of 069-c); KR-069-c: E800-1 (type unknown, away from skull).

KR-070	Common	S (190°)	A	NA	NA	0	4	1	5	KR-070-a: T104-20 (jar, near right foot); KR-070-b: T201-20 (Thai bowl, as cover of 070-a); KR-070-c: T109-21 (ewer, near left foot); KR-070-d: T132-NA (celedon plate); KR-070-e: M111-NA (spindle whorl, by left upper leg).
KR-071	Prone	N (20°)	A (O)	NA	NA	0	0	0	0	Its skull was facing left, i.e. west (ca. 270°)
KR-072	Common	N (10°)	A	NA	NA	0	0	0	0	
KR-073	Headless	NE (25°)	A (O)	NA	NA	1	4	0	5	KR-073-a: T105-3 (jarlet, near left shoulder); KR-073-b: T202-77 (Thai plate, inverted on pelvis); KR-073-c: T101-13 (bowl, inverted on left upper leg); KR-073-d: T131-55 (celedon bowl, inverted on knees); KR-073-e: E800-33 (type unknown, on feet).
KR-074	Common	NA	A	NA	NA	0	0	0	0	
KR-075	Common	N (360°)	C	NA	NA	1	0	0	1	KR-075-a: E801-22 (Ordinary type, away from feet).
KR-076	Common	SW (205°)	A (O)	NA	NA	0	1	0	1	KR-076-a: T131-11 (monochrome bowl, inverted on left palm).
KR-077	Common	N (20°)	J	NA	NA	0	0	0	0	
KR-078	Headless	NE (35°)	A	NA	NA	0	0	0	0	
KR-079	Common	S (190°)	A	NA	NA	1	0	0	1	KR-079-a: E801-1 (Ordinary type, beyond the skull).
KR-080	Common	SW (210°)	NA	NA	NA	0	0	0	0	
KR-081	Common	N (10°)	A	NA	NA	2	1	0	3	KR-081-a: T111-77 (BW bowl, inverted on pelvis); KR-081-b & c: E801-2 (Ordinary type, near right of skull).

KR-082	Common	S (190°)	A	NA	NA	1	2	1	4	KR-082-a: T101-10 (bowl, on right palm); KR-082-b: T101-11 (bowl, inverted on left palm); KR-082-c: E800-44 (type unknown, between lower legs); KR-082-d: M410-NA (charcoal bones).
KR-083	Common	SW (215°)	A	NA	NA	2	1	1	4	KR-083-a: E800-66 (type unknown, between upper legs); KR-083-b: T111-NA (BW bowl); KR-083-c: E800-NA (type unknown); KR-083-d: M111-17 (spindle whorl, by left lower leg).
KR-084	Common	N (20°)	J	NA	NA	1	0	0	1	KR-084-a: E801-17 (Ordinary type, near left lower leg).
KR-085	Common	S (190°)	J	NA	NA	1	0	0	1	KR-085-b: E808-77 (imitation dish, inverted on pelvis).
KR-086	Common	S (200°)	NA	NA	NA	0	2	0	2	KR-086-a & b: T101-NA (bowl).
KR-087	Common	SW (210°)	J	NA	N	0	0	0	0	
KR-088	Common	SE (150°)	A	NA	NA	1	0	0	1	KR-088-a: E800-2 (type unknown, near right of skull).
KR-089	Common	SW (215°)	J	NA	NA	1	5	1	7	KR-088-a: T112-2 (BW plate, near right of skull); KR-088-b: T201-99 (Thai bowl, on chest); KR-088-c: T201-77 (Thai bowl, inverted on pelvis); KR-088-d: T112-22 (BW plate, near feet); KR-088-e: T301-33 (Vietnamese bowl, on feet); KR-088-f: M111-17 (spindle whorl, by the left lower leg); KR-088-g: E801-22 (Ordinary type, close to feet).
KR-090	Common	NE (35°)	A	NA	NA	0	0	1	1	KR-090-a: M111-4 (spindle whorl, by the right upper arm).
KR-091	Common	SW (215°)	J	NA	NA	1	2	0	3	KR-091-a: E800-NA (type unknown); KR-091-b: T101-10 (bowl, inverted on right palm); KR-091-c: T101-11 (bowl, inverted on left palm).

KR-092	Common	S (195°)	J	NA	NA	0	0	0	0	
KR-093	Common	NA	J	NA	NA	0	0	0	0	
KR-094	Common	N (20°)	C	NA	NA	0	0	0	0	
KR-095	Common	NE (25°)	A	NA	NA	0	0	0	0	
KR-096A	Multiple Headless	NE (25°)	A	NA	NA	0	1	0	1	KR-096A was on the top of KR-096B, at opposite direction. KR-096-C was at SW corner of grave pit. KR-096A-a: T111-17 (BW bowl, on left lower leg).
KR-096B	Multiple Headless	SW (205°)	A	NA	NA	0	2	0	2	KR-096A was on the top of KR-096B, at opposite direction. KR-096-C was at SW corner of grave pit. KR-096B-a: T131-44 (monochrome bowl, inverted on lower legs); KR-096B-b: T192-77 (blue dish inverted on pelvis).
KR-096C	Multiple Skull-only	NA	A	NA	NA	0	0	1	1	KR-096A was on the top of KR-096B, at opposite direction. KR-096-C was at SW corner of grave pit. KR-096C-a: M519-3 (large limestone slab, beside skull). However, this item could belong to 096A or 096B.
KR-097	Common	SW (210°)	A	NA	N	1	1	0	2	KR-097-a: E800-1 (type unknown, near the skull); KR-097-b: T101-3 (bowl, beside left of skull).
KR-098	Common	SW (205°)	A	NA	N	0	0	0	0	
KR-099	Semi-flexed	NE (30°)	A (O)	NA	N	0	0	0	0	The skull faced right (i.e. the northwest).
KR-100	Common	NE (50°)	A	NA	NA	0	3	0	3	KR-100-a & b: T201-16 (Thai bowl, by right lower leg); KR-100-c: T109-22 (ewer, near feet).
KR-101	Common	S (200°)	A	NA	NA	1	3	0	4	KR-101-a: E803-1 (Kinalabasa type, near skull); KR-101-b: T111-10 (Chinese BW bowl, on right palm); KR-101-c: T301-11 (Vietnamese bowl, on left palm); KR-101-d: T311-66 (Vietnamese BW bowl, cover between upper legs).

KR-200	Non-skeleton	NA	NA	NA	NA	0	2	0	2	There is no bone found. Not accounted in analysis. KR-200-a: T144-NA (stoneware jar); KR-200-b: T103-NA (saucer).
KR-201	Common	SW (205°)	A	NA	NA	0	1	0	1	KR-201-a: T144-NA (stoneware jar).
KR-202	Common	N (20°)	A	M	NA	0	1	0	1	KR-202-a: T132-99 (monochrome plate, inverted on right chest near shoulder).
KR-203	Common	N (20°)	A (O)	NA	NA	0	0	0	0	
KR-204A	Multiple Common	N (25°)	A	NA	Y (6U6L)	0	0	0	0	
KR-204B	Multiple Common	N (25°)	J	NA	NA	0	0	0	0	
KR-205	Common	SW (205°)	A	NA	N	0	0	0	0	
KR-206	Common	SW (220°)	A	NA	NA	1	2	0	3	KR-206-a: T104-NA (jar); KR-206-b: T103-NA (saucer); KR-206-c: E801-NA (Ordinary type).
KR-207	Non-skeleton	NA	NA	NA	NA	0	1	2	3	There is no bone found. KR-207-a: T123-NA (white ware saucer); KR-207-b: M211-NA (iron bracelet); KR-207-c: M111-NA (spindle whorl).
KR-208	Common	SW (205°)	J	NA	NA	2	0	0	2	KR-208-a & b: E800-NA (type unknown).
KR-209	Headless	SW (205°)	A	NA	NA	0	0	0	0	
KR-210	Common	S (190°)	A	F	Y (?U6L)	0	0	0	0	
KR-211	Headless	NE (25°)	A	NA	NA	0	4	0	4	KR-211-a: T201-17 (Thai bowl, on left lower leg); KR-211-b: T105-17 (jarlet, by left lower leg); KR-211-c: T201-17 (Thai bowl, on left lower leg); KR-211-d: T201-14 (Thai bowl, inverted on right knee).

KR-212	Common	NE (40°)	A	NA	Y (?U8L)	1	1	4	6	KR-212-a: E804-NA (kendi type); KR-212-b: T101-NA (bowl); KR-212-c & d: M301-10 (green glass bracelet, on right wrist); KR-212-e & f: M301-11 (green glass bracelet, on left wrist).
KR-213	Common	SW (205°)	A	NA	NA	0	0	0	0	
KR-215	Prone Headless	N (360°)	J	NA	N	0	4	0	4	KR-215-a: M301-11 (green glass bracelet, on left wrist); KR-215-b: T302-14 (Vietnamese plate, on right knee); KR-215-c: T131-66 (monochrome bowl, between upper legs); KR-215-d: T131-13 (monochrome bowl, by left upper leg).
KR-217	Multiple Common	N (35°)	A	NA	NA	2	1	0	3	KR-217 was on the top of KR-218, at different orientation. KR-217-a: T112-33 (BW plate, on feet); KR-217-b & c: E800-22 (type unknown, near feet).
KR-218	Multiple Common	SE (140°)	A	NA	NA	0	0	0	0	KR-217 was on the top of KR-218, at different orientation.
KR-219	Semi-flexed	NE (25°)	A	NA	NA	1	0	0	1	The skull faced right (i.e. northwest). KR-219-a: E804-NA (kendi type, beside pelvis?).
KR-220	Common	N (360°)	A	NA	NA	1	1	0	2	KR-220-a: E800-33 (type unknown, on feet); KR-220-b: T132-99 (celedon plate, on chest).
KR-221	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. KR-221-a: E800-NA (earthenware pot).
KR-222	Common	NA	A	NA	NA	2	0	1	3	KR-222-a: E801-5 (Ordinary type, near left upper arm); KR-222-b: M111-NA (spindle whorl); KR-222-c: E804-1 (kendi type, inverted near skull).
KR-223	Common	SW (210°)	NA	NA	NA	0	0	0	0	KR-223 was partly intruded by KR-227, two skulls were side by side.

KR-224	Common	SW (220°)	A	NA	NA	0	0	0	0	
KR-225	Common	SW (220°)	A	NA	NA	1	2	4	7	KR-225-a: T112-77 (BW plate, inverted on pelvis); KR-225-b: T131-55 (monochrome bowl, inverted on knees); KR-225-c: M301-11 (green glass bracelet, on left wrist); KR-225-d: M301-10 (green glass bracelet, on right wrist); KR-225-e: M111-10 (spindle whorl, near right palm); KR-225-f: E800-17 (type unknown, near left lower leg); KR-225-g: M218-8 (iron implement, along right hand).
KR-226	Headless	SW (205°)	NA	NA	NA	0	0	0	0	
KR-227	Common	NE (40°)	NA	NA	NA	0	0	0	0	KR-223 was partly intruded by KR-227, two skulls were side by side.
KR-228	Common	SW (220°)	A	NA	NA	2	1	0	3	KR-228-a: E800-22 (type unknown, away from feet); KR-228-b: E800-1 (type unknown, away from skull); KR-228-c: T113-66 (BW saucer, inverted between upper legs).
KR-229	Common	NW (310°)	C	NA	NA	0	0	0	0	
KR-230	Common	NE (40°)	A (O)	NA	NA	1	1	0	2	KR-230-a: T131-17 (monochrome bowl, near left lower leg); KR-230-b: E804-17 (kendi type, near left lower leg).
KR-231	Common	NW (305°)	A	NA	NA	0	0	0	0	
KR-232	Non-skeleton	NA	NA	NA	NA	1	0	1	2	There is no bone found. KR-232-a: E800-NA (type unknown); KR-232-b: M218-NA (iron implement).
KR-233	Non-skeleton	NA	NA	NA	NA	0	5	1	6	There is no bone found. KR-233-a: T105-NA (jarlet); KR-233-b: T131-NA (monochrome bowl); KR-233-c: T101-NA (bowl); KR-233-d: M111-NA (spindle whorl); KR-233-e: T112-NA (BW plate); KR-233-f: T144-NA (stoneware jar).

KR-234	Common	NE (25°)	A	NA	NA	0	0	0	0	
KR-235	Headless	SW (205°)	NA	NA	NA	0	3	2	5	KR-235-a: T135-a (monochrome jarlet, near right shoulder); KR-235-b: M111-11 (spindle whorl, on left palm); KR-235-c: T201-11 (Thai bowl, inverted on left palm); KR-235-d: T201-10 (Thai bowl, on right palm); KR-235-e: M901-11 (bracelet, on left wrist).
KR-236	Headless	NE (25°)	A	NA	NA	1	0	0	1	KR-236-a: E800-2 (type unknown, near right shoulder).
KR-237	Common	SW (205°)	NA	NA	NA	1	0	0	1	KR-237-a: E800-2 (type unknown, beside right of skull).
KR-238	Common	S (200°)	A	NA	NA	0	1	0	1	KR-238-a: T104-22 (jar, away from feet).
KR-239	Common	S (200°)	NA	NA	NA	0	0	0	0	
KR-240	Common	N (20°)	NA	NA	NA	0	0	0	0	
KR-241	Disturbed Bundle	NA	J	NA	NA	0	0	0	0	
KR-242	Common	NE (35°)	A (Y)	NA	Y (4U?L)	0	0	0	0	
KR-245	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. KR-245-a: T808-NA (imitation ewer).

Appendix Four

Appendix 4: Summary of mortuary database of Palapat, Calatagan

Burial-No.	Type	Orientation	Age	Sex	Tooth-filing	EA	TC	MS	GG	Notes
PP-M001	Common	SE (125°)	A	NA	NA	2	5	0	7	PP-M001-a: T112-77 (BW plate, inverted on the pelvis); PP-M001-b: E803-1 (Kinalabasa type, above the skull); PP-M001-c: E801-1 (Ordinary type, above the skull); PP-M001-d: T112-22 (BW plate, around feet); PP-M001-e: T101-22 (bowl, around feet); PP-M001-f: T115-22 (BW jarlet, around feet); PP-M001-g: T133-22 (monochrome saucer, around feet).
PP-M002	Common	NE (40°)	A (O)	NA	NA	0	0	0	0	
PP-M003	Common	NE (40°)	A (Y)	NA	N	0	1	0	1	PP-M003-a: T131-17 (monochrome bowl, left lower leg).
PP-M004	Common	NE (40°)	A (Y)	NA	NA	0	1	0	1	PP-M004-a: T144-20 (stoneware jar, beside right foot).
PP-M005	Common	E (110°)	C	NA	NA	0	0	1	1	PP-M005-a: M111-5 (spindle whorl, at left upper arm).
PP-M006	Common	NE (50°)	A (O)	NA	Y	0	0	0	0	
PP-M007	Common	NE (60°)	A (Y)	NA	N	0	0	0	0	
PP-M008	Common	SE (115°)	C	NA	NA	0	3	0	3	PP-M008-a: T164-1 (over-glazed jar, above skull); PP-M008-b: T111-17 (BW bowl, inverted left lower leg); PP-M008-c: T104-1 (small jar, above skull).
PP-M009	Common	S (165°)	A (O)	NA	NA	1	0	0	1	PP-M009-a: E809-77 (imitation bowl form, cover the pelvis).
PP-M010	Common	S (165°)	A (Y)	NA	Y (9U8L)	0	0	0	0	
PP-M011	Common	E (90°)	C	NA	NA	0	1	0	1	PP-M011-a: T131-1 (monochrome bowl, above the skull).

PP-M012	Jar burial	NA	I	NA	NA	0	0	0	0	PP-M012-jar: E800 (large earthenware jar as burial jar).
PP-M013	Common	E (90°)	A (O)	NA	N	0	0	0	0	
PP-M014	Common	N (360°)	A (Y)	NA	Y (6U4L)	1	2	1	4	PP-M014-a: T205-3 (Thai jarlet, by the left of the skull); PP-M014-b: E801-17 (Ordinary type, by the left lower leg); PP-M014-c: T111-13 (BW bowl, inverted left upper leg); PP-M014-d: M111-2 (spindle whorl, near right shoulder).
PP-M015	Common	E (90°)	A (Y)	NA	NA	0	0	0	0	
PP-M016	Common	E (75°)	J	NA	NA	0	0	0	0	
PP-M017	Common	N (3°)	J	NA	NA	0	0	0	0	
PP-M018	Common	E (85°)	A (O)	NA	NA	2	1	0	3	PP-M018-a: E801-3 (Ordinary type, left of the skull); PP-M018-b: T111-2 (BW bowl, by the right of the skull); PP-M018-c: E801-2 (Ordinary type, right of the skull).
PP-M019	Common	E (105°)	A (O)	F	Y (6U5L)	0	0	0	0	
PP-M020A	Multiple Common	NE (55°)	A (O)	F	NA	0	0	0	0	PP-M020A/020B were buried together.
PP-M020B	Multiple Common	NE (55°)	A (O)	M	NA	0	0	0	0	PP-M020A/020B were buried together.
PP-M021	Common	E (75°)	NA	NA	NA	0	1	0	1	PP-M021-a: T131-22 (monochrome bowl, at feet).
PP-M022	Common	E (105°)	A (O)	NA	NA	0	0	0	0	
PP-M023	Common	E (90°)	A (O)	F	Y (5U5L)	1	0	1	2	PP-M023-a: E801-44 (Ordinary type, between lower feet); PP-M023-b: M111-7 (spindle whorl, at left elbow).

PP-M024	Common	N (15°)	A (O)	NA	Y	1	0	0	1	PP-M024-a: E801-22 (Ordinary type, beyond the feet).
PP-M025	Common	E (90°)	A	NA	Y	1	1	0	2	PP-M025-a: E801-1 (Ordinary type, above the skull); PP-M025-b: T113-2 (BW saucer, beside right of the skull).
PP-M026	Common	SE (120°)	A (O)	NA	NA	0	0	0	0	
PP-M027	Common	E (75°)	A	NA	NA	0	0	0	0	
PP-M028	Common	SE (120°)	A	NA	NA	1	2	1	4	PP-M028-a: M410-5 (deer jaw, by the left upper arm); PP-M028-b: T111-9 (BW bowl, by the left lower arm); PP-M028-c: E801-22 (Ordinary type, beyond the feet); PP-M028-d: T111-12 (BW bowl, by the right upper leg).
PP-M029	Common	SE (120°)	A (O)	NA	Y (7U9L)	2	0	0	2	PP-M029-a & b: E800-NA (type unknown).
PP-M030	Common	E (105°)	A (O)	M	Y	0	2	2	4	PP-M030-a: T144-9 (stoneware jar, to the left of skeleton); PP-M030-b: T132-100 (monochrome plate, inverted on the skull); PP-M030-c: M111-5 (spindle whorl, at left upper arm); PP-M030-d: M218-13 (iron implement, by left upper leg).
PP-M031	Common	E (100°)	A	F	Y (7U6L)	2	0	0	2	PP-M031-a: E801-77 (Ordinary type, on top of pelvis); PP-M031-b: E801-22 (Ordinary type, at feet).
PP-M032	Common	NE (30°)	J	NA	NA	1	0	0	1	PP-M032-a: E801-44 (Ordinary type, between lower legs).
PP-M033	Common	SE (130°)	A (O)	NA	NA	1	0	0	1	PP-M033-a: E801-8 (Ordinary type, by right of the pelvis).
PP-M034	Common	SE (135°)	A	NA	Y	1	0	0	1	PP-M034-a: E801-1 (Ordinary type, beyond the skull).
PP-M035	Common	SE (135°)	A (O)	NA	NA	0	0	0	0	

PP-M036	Common	E (90°)	A (Y)	NA	NA	0	0	0	0	PP-M036/037 were side by side.
PP-M037	Common	E (90°)	A (O)	NA	N	1	0	0	1	PP-M036/037 were side by side. PP-M037-a: E801-17 (Ordinary type, inverted on the left lower leg).
PP-M038	Common	SE (145°)	A	NA	NA	1	0	0	1	PP-M038-a: E801-20 (Ordinary type, beside right ankle).
PP-M039	Common	SE (125°)	C	NA	NA	0	2	0	2	PP-M039-a: T131-21 (monochrome bowl, as cover of M039-b); PP-M039-b: T144-21 (stoneware jar, by the left foot).
PP-M040A	Multiple Headless	NE (45°)	A	NA	Y	0	1	2	3	A headless skeleton, but atlas presented. Four adult skulls were placed together beside the left feet. PP-M040A-a: TC, BW plate, inverted on the lower legs; PP-M040A-b: MS, a stone statue at feet and facing four skulls; PP-M040A-c: MS, two carnelian beads at chest.
PP-M040B	Multiple Skull only	NA	A	M	Y	0	0	0	0	PP-M040B/C/D/E were placed together on a flat lime rock, and beside the left feet of PP-M040A.
PP-M040C	Multiple Skull only	NA	A (O)	M	Y	0	0	0	0	PP-M040B/C/D/E were placed together on a flat lime rock, and beside the left feet of PP-M040A.
PP-M040D	Multiple Skull only	NA	A	M	NA	0	0	0	0	PP-M040B/C/D/E were placed together on a flat lime rock, and beside the left feet of PP-M040A.
PP-M040E	Multiple Skull only	NA	A	NA	Y	0	0	0	0	PP-M040B/C/D/E were placed together on a flat lime rock, and beside the left feet of PP-M040A.

PP-M041	Common	NE (45°)	A (Y)	M	Y (8U8L)	0	0	0	0	
PP-M042	Common	NA	C	NA	NA	0	0	0	0	
PP-M043	Common	N (10°)	I	NA	NA	1	1	0	2	PP-M043-a: E801-12 (Ordinary type, at right leg); PP-M043-b: T131-13 (monochrome bowl, along left leg).
PP-M044	Common	N (7°)	A	F	Y (6U6L)	0	0	0	0	
PP-M045	Common	E (90°)	A (O)	NA	N	1	1	0	2	PP-M045-a: E801-22 (Ordinary type, above the feet); PP-M045-b: T131-44 (monochrome bowl, between lower legs).
PP-M046	Common	E (100°)	A (Y)	NA	N	1	1	0	2	PP-M046-a: T123-NA (whiteware saucer); PP-M046-b: E801-3 (Ordinary type, at left side of skull).
PP-M047	Common	E (85°)	C	NA	NA	1	2	1	4	PP-M047-a: E803-1 (Kinalabasa type, above the skull); PP-M047-b: T149-3 (stoneware kendi, left side of skull); PP-M047-c: M110-3 (unknown clay object, left of skull); PP-M047-d: T112-33 (BW plate, inverted on the feet).
PP-M048	Common	SE (115°)	A (Y)	NA	N	1	1	0	2	PP-M048-a: E801-3 (Ordinary type, by left side of skull); PP-M048-b: T111-NA (BW bowl).
PP-M049	Common	E (95°)	A (O)	NA	N	1	2	0	3	PP-M049-a: E803-NA (Kinalabasa type); PP-M049-b: T111-44 (BW bowl, inverted between lower legs); PP-M049-c: T120-3 (whiteware, left side of skull).
PP-M050	Common	N (360°)	A (O)	NA	NA	0	0	0	0	
PP-M051	Common	N (20°)	C	NA	NA	0	2	0	2	PP-M051-a: T131-1 (monochrome bowl, around the skull); PP-M052-b: T201-99 (Thai bowl, around the chest).

PP-M052	Common	NE (45°)	I	NA	NA	2	1	0	3	PP-M052-a: E803-1 (Kinalabasa type, around the head); PP-M052-b: E803-NA (Kinalabasa type); PP-M052-c: T133-77 (monochrome saucer, inverted on the pelvis).
PP-M053	Common	E (85°)	A (Y)	NA	NA	1	0	0	1	PP-M053-a: E801-2 (Ordinary type, right side of skeleton).
PP-M054	Common	E (90°)	A (O)	NA	Y (4U?L)	2	0	0	2	PP-M054-a: E801-1 (Ordinary type, above the skull); PP-M054-b: E801-3 (Ordinary type, left of skull).
PP-M055	Common	SE (120°)	A (O)	NA	Y	2	0	0	2	PP-M055-a & b: E801-22 (Ordinary type, above the feet).
PP-M056	Common	S (165°)	A (Y)	NA	Y	0	0	0	0	
PP-M057	Common	N (20°)	A (Y)	NA	N	1	2	2	5	PP-M057-a: T112-44 (BW plate, inverted on lower feet); PP-M057-b: T205-44 (Thai jarlet, on M057-a); PP-M057-c: M301-11 (green glass bracelet, on left wrist); PP-M057-d: M301-10 (green glass bracelet, right wrist); PP-M057-e: E804-77 (kendi type, on pelvis).
PP-M058	Common	E (90°)	C	NA	NA	0	0	0	0	
PP-M059	Common	SE (125°)	A (Y)	NA	Y	0	0	1	1	PP-M059-a: M111-12 (spindle whorl, by right upper leg).
PP-M060	Common	NE (50°)	C	NA	NA	0	0	0	0	
PP-M061	Headless	NE (50°)	A (O)	NA	NA	0	1	0	1	PP-M061-a: T111-100 (BW bowl, at the position of skull).
PP-M062	Common	E (80°)	C	NA	NA	0	0	0	0	

PP-M063	Common	SE (115°)	C	NA	NA	1	0	0	1	PP-M063-a: E803-66 (Kinalabasa type, above the position of upper legs).
PP-M064	Jar burial	SE (120°)*	I	NA	N	0	0	0	0	PP-M064-jar: burial jar type unknown.
PP-M065	Common	NA	C	NA	NA	0	1	0	1	PP-M-065-a: T112-100 (BW plate, cover the skull).
PP-M066	Common	SE (130°)	A (Y)	NA	N	0	0	0	0	
PP-M067	Common	NE (30°)	A (O)	NA	Y	0	0	0	0	
PP-M068	Common	NE (40°)	A (O)	NA	Y (6U4L)	1	0	0	1	PP-M-068-a: E801-NA (Ordinary type).
PP-M069	Common	NE (65°)	C	NA	NA	0	0	0	0	
PP-M070	Common	SE (145°)	C	NA	NA	0	0	0	0	
PP-M071	Flexed	NW (310°)	A (O)	NA	Y	0	0	3	3	Skeleton in strange position: upper part in supine, but legs flexed and bent toward right, also both lower arms bent up toward the head. PP-M071-a: M120-77 (over-glazed disc on pelvis); PP-M071-b: M120-5 (BW sherd, beside left of skeleton); PP-M071-c: M430-77 (a very large shell cover on pelvis).
PP-M072	Common	SE (135°)	A (O)	NA	N	0	0	0	0	
PP-M073	Common	NE (40°)	A	NA	Y (6U4L)	0	0	3	3	PP-M073-a: M430-1 (large shell, above skull); PP-M073-b: M430-8 (large shell, by the right lower arm); PP-M073-c: M430-22 (large shell, at feet).
PP-M074	Common	SE (120°)	C	NA	N	0	1	2	3	PP-M074-a: T112-33 (BW plate, inverted on the feet); PP-M074-b: M523-11 (8 carnelian beads, at left wrist); PP-M074-c: M301-11 (blue glass bracelet, left wrist).

PP-M075	Common	SW (205°)	C	NA	N	1	1	1	3	PP-M075-a: M431-10 (shell bracelet, right wrist); PP-M075-b: E801-NA (Ordinary type); PP-M075-c: T144-NA (stoneware jar).
PP-M076	Common	SE (135°)	A	NA	Y	0	0	0	0	
PP-M077	Common	SE (120°)	NA	NA	Y	0	0	0	0	
PP-M078	Common	SW (220°)	A (Y)	NA	N	0	0	0	0	
PP-M079	Common	E (90°)	A (O)	NA	N	1	0	0	1	PP-M079-a: E801-NA (Ordinary type).
PP-M080	Disturbed Bundle	NA	C	NA	NA	0	0	1	1	PP-M080-a: M111-NA (spindle whorl).
PP-M081	Common	NE (45°)	A	NA	NA	0	0	0	0	
PP-M082	Common	NE (65°)	A (O)	NA	N	1	4	0	5	PP-M082-a: E800-7 (type unknown, by the left elbow); PP-M082-b: T142-2 (stoneware plate, right of skull); PP-M082-c: T245-3 (Thai stoneware jarlet, left of skull); PP-M082-d: T244-1 (Thai stoneware jar, around skull); PP-M082-e: T143-1 (Chinese stoneware saucer, as cover of M082-d).
PP-M083	Common	S (160°)	A (O)	NA	NA	0	0	0	0	
PP-M084	Common	SE (130°)	A (Y)	NA	Y	0	0	0	0	
PP-M085	Common	SE (115°)	A (Y)	NA	Y	0	0	0	0	
PP-M086	Headless	SE (130°)	A (O)	NA	NA	0	0	0	0	
PP-M087	Common	SE (120°)	C	NA	NA	1	2	0	3	PP-M089-a: T131-66 (green bowl, between upper legs); PP-M089-b: T139-66 (monochrome cup, beside M089-a); PP-M089-c: E801-1 (Ordinary type, above skull).

PP-M088	Common	NE (35°)	A (Y)	NA	NA	2	1	1	4	PP-M088-a: E803-1 (Kinalabasa type, around the head); PP-M088-b: E801-44 (Ordinary type, between two lower legs); PP-M088-c: T112-15 (BW plate, cover on left knee); PP-M088-d: M111-13 (spindle whorl, at left upper leg).
PP-M089	Common	NE (30°)	J	NA	NA	0	0	1	1	PP-M089-a: M301-10 (glass bracelet, at right wrist).
PP-M090	Common	NE (45°)	A (Y)	NA	Y	0	0	0	0	
PP-M091	Common	SE (115°)	C	NA	NA	0	0	0	0	
PP-M092	Common	E (90°)	A (O)	NA	Y	0	0	1	1	PP-M092-a: M111-1 (spindle whorl, above skull).
PP-M093	Common	NA	A (O)	NA	NA	0	0	0	0	
PP-M094	Multiple Common	SE (120°)	A	NA	Y (6U6L)	2	1	0	3	PP-M094/M099 were buried together. PP-M094-a: E800-2 (type unknown, beside right of skull); PP-M094-b: E800-33 (type unknown, inverted on the feet); PP-M094-c: T144-4 (stoneware jar, by right upper arm).
PP-M095	Common	E (90°)	C	NA	NA	0	0	0	0	
PP-M096	Common	E (90°)	A (O)	NA	Y (6U6L)	2	1	0	3	PP-M096-a: T131-22 (monochrome bowl, as cover of M096-b); PP-M096-b: E800-22 (type unknown, around the feet); PP-M096-c: E801-33 (Ordinary type, inverted on the feet).
PP-M097	Common	E (90°)	A (O)	NA	NA	1	1	0	2	PP-M097-a: T131-17 (monochrome bowl, beside left lower leg); PP-M097-b: E801-22 (Ordinary type, above feet).
PP-M098	Common	SE (115°)	A (O)	NA	NA	1	0	1	2	PP-M098-a: E800-NA (type unknown); PP-M098-b: M430-NA (hip of shells).

PP-M099	Multiple Common	E (110°)	I	NA	N	1	0	0	1	PP-M094/M099 were buried together. PP-M099-a: E801-33 (Ordinary type, on the feet).
PP-M100	Headless	E (95°)	NA	NA	NA	0	0	0	0	
PP-M101	Common	E (105°)	NA	NA	NA	0	0	0	0	
PP-M102	Common	E (75°)	A	NA	N	0	1	1	2	PP-M102-a: T132-16 (monochrome plate, above right lower leg); PP-M102-b: M301-15 (glass bracelet, on left knee).
PP-M103	Common	N (360°)	J	NA	NA	2	1	0	3	PP-M103-a: E801-NA (Ordinary type); PP-M103-b: E803-3 (Kinalabasa type, left side of skull); PP-M103-c: T111-55 (BW bowl, cover on knees).
PP-M104	Common	E (90°)	J	NA	N	1	0	2	3	PP-M104-a: E801-55 (Ordinary type, inverted on knees); PP-M104-b: M229-14 (brass bell, beside right knee); PP-M104-c: M430-17 (hip of shells, along left lower leg).
PP-M105	Common	E (90°)	A (Y)	NA	Y	2	2	1	5	PP-M105-a: E801-5 (Ordinary type, inverted on left arm); PP-M105-b: T301-100 (Vietnamese bowl, inverted on mandible); PP-M105-c: T113-77 (BW saucer, covered the pelvis); PP-M105-d: M111-NA (spindle whorl); PP-M105-e: E801-NA (Ordinary type).
PP-M106	Headless	E (90°)	A (Y)	NA	NA	2	0	0	2	PP-M106-a: E804-1 (Exx3 kendi type, beside skull); PP-M106-b: E801-NA (Ordinary type).
PP-M107	Common	SE (120°)	A	F	Y (6U4L)	2	1	1	4	PP-M107-a: E800-NA (type unknown); PP-M107-b: T112-99 (BW plate, covered on chest); PP-M107-c: M112-55 (net sinker, between knees); PP-M107-d: E800-22 (type unknown, around feet).
PP-M108	Common	N (360°)	A (O)	NA	NA	2	0	0	2	PP-M108-a: E803-22 (Kinalabasa type, around the feet); PP-M108-b: E801-44 (Ordinary type, on the lower legs).
PP-M109	Semi-flexed	SW (235°)	A	NA	Y (6U6L)	0	0	0	0	The skull faced right (i.e. the southeast).
PP-M110	Semi-flexed	E (90°)	A	NA	Y	0	0	0	0	The skull faced right (i.e. the north).

PP-M111A	Multiple Common	E (90°)	A	NA	Y (7U?L)	2	1	0	3	One adult skull, PP-M111B, at right side of skull. PP-M111A-a: E803-33 (Kinalabasa type, over the feet); PP-M111A-b: E803-15 (Kinalabasa type, right of knees); PP-M111A-c: T311-77 (Vietnamese BW bowl, on left part of pelvis).
PP-M111B	Multiple Skull-only	NA	A	NA	NA	0	0	0	0	To the right side of skull of PP-M111A.
PP-M112	Common	N (360°)	A	NA	Y (8U6L)	0	0	0	0	
PP-M113	Common	E (95°)	A (O)	F	Y (6U?L)	2	2	1	5	PP-M113-a: E800-2 (type unknown, at right side of skull); PP-M113-b: E800-3 (type unknown, at left side of skull); PP-M113-c: T101-55 (bowl, covered on knees); PP-M113-d: T112-77 (BW plate, inverted on pelvis); PP-M113-e: M111-77 (spindle whorl, on pelvis).
PP-M114	Common	E (90°)	J	NA	NA	0	1	0	1	PP-M114-a: T111-100 (BW bowl, cap the skull).
PP-M115	Common	SE (155°)	A (Y)	NA	Y	2	0	0	2	PP-M115-a: E803-5 (Kinalabasa type, by left upper arm); PP-M115-b: E801-5 (Ordinary type, by the left lower arm).
PP-U001	Common	SE (130°)	A (Y)	NA	Y (6U0L)	1	2	0	3	PP-U001-a: T135-NA (monochrome jarlet); PP-U001-b: T131-55 (monochrome bowl, inverted on the knees); PP-U001-c: E804-4 (kendi type, near right upper arm).
PP-U002	Common	SE (135°)	A (O)	M	N	1	0	0	1	PP-U002-a: E801-20 (Ordinary type, near right foot).
PP-U003	Common	S (175°)	C	NA	N	0	0	0	0	

PP-U004	Common	NE (50°)	A (O)	NA	NA	0	4	0	4	PP-U004-a: T105-3 (jarlet, beside left of skull); PP-U004-b: T103-2 (saucer, hole-bottom, beside right of skull); PP-U004-c: T131-44 (monochrome bowl, between lower legs); PP-U004-d: T131-44 (monochrome bowl, inverted on between lower legs).
PP-U005	Common	NE (45°)	A	NA	NA	0	0	0	0	
PP-U006	Common	NE (40°)	A	NA	NA	0	0	0	0	
PP-U007	Common	SE (135°)	A (O)	NA	NA	2	3	0	5	PP-U007-a: E804-18 (kendi type, at end of right foot); PP-U007-b: E803-19 (Kinalabasa type, at end of left foot); PP-U007-c: T131-17 (monochrome bowl, on left lower leg); PP-U007-d: T112-77 (BW plate, inverted on the pelvis); PP-U007-e: T105-1 (jarlet, on top of skull).
PP-U008	Common	SE (140°)	A (Y)	NA	NA	2	3	1	6	PP-U008-a: E800-20 (type unknown, around right side of the feet); PP-U008-b: T112-77 (BW plate, covered on pelvis); PP-U008-c: T112-100 (BW plate, covered on skull); PP-U008-d: T205-1 (Thai jarlet, above skull); PP-U008-e: E800-1 (type unknown, above skull); PP-U008-f: M291-NA (Chinese coin).
PP-U009	Common	SE (150°)	A (O)	NA	NA	0	1	0	1	PP-U009-a: T112-44 (BW plate, between lower legs).
PP-U010	Common	S (165°)	NA	NA	NA	0	0	1	1	PP-U010-a: M291-33 (Chinese coin, on the feet).
PP-U011	Common	E (95°)	A (O)	NA	NA	0	0	0	0	
PP-U012	Common	E (90°)	A (O)	NA	NA	1	1	1	3	PP-U012-a: E803-1 (Kinalabasa type, above skull); PP-U012-b: M111-21 (spindle whorl, at left foot); PP-U012-c: T111-1 (BW bowl, as cover of U012-a).

PP-U013	Common	N (360°)	A (O)	NA	NA	2	0	0	2	PP-U013-a: E803-20 (Kinalabasa type, near right foot); PP-U013-b: E800-17 (type unknown, by left lower leg).
PP-U014	Disturbed Bundle	NA	A (O)	NA	NA	0	0	0	0	
PP-U015	Common	E (70°)	A	NA	NA	1	0	0	1	PP-U015-a: E803-44 (Kinalabasa type, between lower legs).
PP-U016	Disturbed Bundle	NA	A	NA	NA	0	0	0	0	
PP-U017	Jar burial	E (105°)	I	NA	N	0	0	0	0	PP-U017-jar: T144 (stoneware jar as burial container).
PP-U018	Non-skeleton	NA	NA	NA	NA	1	1	0	2	There is no skeleton found. PP-U018-a: T112-NA (BW plate); PP-U018-b: .E800-NA (unknown type)
PP-U019	Common	NE (60°)	NA	NA	Y (6U6L)	1	1	0	2	PP-U019-a: E808-44 (imitation plate type, between lower legs); PP-U-019-b: T131-44 (monochrome bowl, inverted on U019-a).

Appendix Five

Appendix 5: Summary of mortuary database of Punta Sunog, Calatagan

Burial-No.	Type	Orientation	Age	Sex	Tooth-filing	EA	TC	MS	GG	Notes
PS-001	Common	E (90°)	A (Y)	NA	NA	0	0	0	0	
PS-002	Common	E (90°)	J	NA	NA	3	2	0	5	PS-002-a: E803-NA (Kinalabasa type); PS-002-b: E801-NA (ordinary type); PS-002-c: E801-NA (ordinary type); PS-002-d: T101-NA (bowl as cover of an EA pot); PS-002-e: T161-77 (over-glazed plate cover pelvic).
PS-003	Common	E (90°)	J	NA	NA	2	0	0	2	PS-003-a: E803 (Kinalabasa type, above skull); PS-003-b: E801 (ordinary type, above skull).
PS-004	Common	E (90°)	A (O)	NA	NA	2	4	0	6	There is one TC bowl by each hand. PS-004-a: E803-16 (Kinalabasa type); PS-004-b: T113-16 (BW saucer, as cover of 004-a); PS-004-c: T112-77 (BW plate, inverted on the pelvic); PS-004-d: T111-11 (BW bowl at left hand); PS-004-e: T121-10 (white bowl, at right hand); PS-004-f: E800-NA.
PS-005	Common	E (90°)	J	NA	NA	2	2	0	4	PS-005-a: E800-NA; PS-005-b: E801-1 (ordinary type, above skull); PS-005-c: T131-9 (monochrome bowl, by left radius); PS-005-d: T111-77 (BW bowl, inverted on the pelvic).
PS-006	Common	S (180°)	C	NA	NA	1	0	0	1	PS-006-a: E801-21 (ordinary type, at left foot).
PS-007	Common	E (90°)	A (O)	NA	Y	2	0	0	2	PS-007-a: E801-1 (ordinary type, above skull); PS-007-a: E803-22 (Kinalabasa type, over feet).
PS-008	Headless	NE (60°)	A (O)	NA	NA	0	0	0	0	
PS-009	Common	N (360°)	A (O)	NA	Y (6U8L)	2	0	0	2	Both hands were under the pelvic. PS-009-a: E803-2 (Kinalabasa type, at right of skull); PS-009-b: E801-3 (ordinary type, at left of skull).
PS-010	Common	E (80°)	A (O)	NA	NA	0	0	0	0	

PS-011	Common	NA	A (O)	NA	NA	2	2	0	4	PS-011-a: T112-77 (BW plate, inverted on the pelvic); PS-011-b: E801-16 (Ordinary type, at right low leg); PS-011-c: E801-NA (Ordinary type); PS-011-d: T111-NA (BW bowl).
PS-012	Common	E (80°)	A (O)	NA	Y	2	0	0	2	PS-012-a: E803-2 (Kinalabasa type); PS-012-b: E801-3 (Ordinary type).
PS-013	Common	E (90°)	C	NA	NA	2	2	0	4	PS-013-a: T111-66 (BW bowl cover between two femurs); PS-013-b: E803-3 (Kinalabasa type, left side of skull); PS-013-c: E801-22 (Ordinary type at feet); PS-013-d: T111-22 (BW bowl, inverted on 013-c).
PS-014	Common	E (70°)	A (O)	NA	NA	0	1	0	1	PS-014-a: T111-12 (broken BW bowl, above right femur).
PS-015	Flexed	N (350°)	A (O)	NA	NA	1	0	0	1	Skeleton in strange position: upper part in supine, but legs flexed and bent toward left, also both lower arms bend up toward the head. PS-015-a: E801-NA (Ordinary type, broken).
PS-016	Common	NA	A (O)	NA	NA	0	0	0	0	
PS-017	Common	N (360°)	J	NA	NA	1	1	0	2	PS-017-a: E803-NA (Kinalabasa type); PS-017-b: T123-NA (white saucer, as cover of 017-a).
PS-018	Common	E (90°)	A (O)	NA	NA	1	1	1	3	PS-018-a: T102-2 (plate, as cover of 018-b); PS-018-b: E800-2 (type unknown, at right of skull); PS-018-c: M410-99 (a group of 6 animal bones on chest).
PS-019	Common	E (90°)	A (Y)	NA	NA	1	0	0	1	Both hands were under pelvis. PS-019-a: E803-NA (Kinalabasa type, broken).
PS-020	Common	E (90°)	A (Y)	NA	Y	0	0	1	1	There was one coral above the skull. PS-020-a: M111-3 (spindle whorl at left side of skull).

PS-021	Common	E (90°)	A (O)	NA	NA	0	5	3	8	PS-021-a: T112-77 (BW plate, inverted on the pelvis); PS-021-b: T112-66 (BW plate cover between femurs); PS-021-c: M111-66 (spindle whorl at between femurs); PS-021-d: M519-9 (gripped marked stone at left radius); PS-021-e: T115-3 (BW jarlet at left skull); PS-021-f: T111-100 (BW bowl, on parietal bone); PS-021-g: T111-2 (BW bowl at right of skull); PS-021-h: M903-77 (2 beads at right of pelvis).
PS-022	Multiple Common	E (90°)	A (O)	NA	NA	1	1	0	2	PS-022/023 were buried together. PS-022-a: T111-66 (BW bowl between femurs); PS-022-b: E801-5 (Ordinary type at left shoulder).
PS-023	Multiple Jar burial	E (90°)*	I	NA	N	0	1	0	1	PS-022/023 were buried together. PS-023-jar: large TC jar, broken and incomplete, burial jar. PS-023-a: T133 (monochrome saucer as cover of jar).
PS-024	Common	E (90°)	C	NA	NA	2	0	1	3	PS-024-a & b: E801 (Ordinary type, near skull); PS-024-c: M512-NA (stone tool).
PS-025	Common	NA	A (O)	NA	NA	2	4	0	6	PS-025-a: E801-12 (Ordinary type, by the right femur); PS-025-b: T112-66 (BW plate, inverted on right femur); PS-025-c: T113-12 (BW saucer, at right femur); PS-025-d: T113-66 (BW saucer, between femurs); PS-025-e: E801-3 (Ordinary type, at left side of skull); PS-025-f: T131-44 (monochrome bowl, between lower legs).
PS-026	Common	NA	NA	NA	NA	2	0	0	2	PS-026-a: E803-NA (Kinalabasa type); PS-026-b: E801-NA (Ordinary type).
PS-027	Common	E (90°)	A (O)	NA	NA	0	0	0	0	
PS-028	Common	E (80°)	C	NA	NA	1	0	0	1	PS-028-a: E801-3 (Ordinary type, at left side of skull).
PS-029	Common	E (90°)	A (O)	NA	NA	2	0	0	2	PS-029-a: E801-2 (Ordinary type, at right side of skull); PS-029-b: E803-3 (Kinalabasa type, at left side of skull).

PS-030	Disturbed Bundle	NA	C	NA	NA	1	2	2	5	One individual only. PS-030-a: T111-NA (BW bowl, cover of 030-b); PS-030-b: E801-NA (Ordinary type); PS-030-c: M900-NA (unknown type); PS-030-d: M303-NA (glass beads); PS-030-e: T112-NA (BW plate).
PS-031	Common	E (90°)	A (Y)	NA	NA	2	3	0	5	PS-031-a: T133-NA (monochrome saucer, as cover of 031-d); PS-031-b: T131-NA (monochrome bowl, as cover of 031-e); PS-031-c: T112-77 (BW plate, inverted on pelvis); PS-031-d: E804-NA (kendi type); PS-031-e: E801-NA (Ordinary type).
PS-032	Common	N (360°)	A (Y)	NA	Y (?U6L)	0	0	1	1	PS-032-a: M112-16 (clay net sinker at right lower leg).
PS-033	Common	S (180°)	J	NA	NA	0	0	0	0	
PS-034	Common	E (80°)	A (O)	NA	Y	1	2	1	4	PS-034-a: T112-77 (BW plate at pelvis); PS-034-b: T115-77 (BW jarlet, at pelvis); PS-034-c: M111-99 (spindle whorl at right ribs); PS-034-d: E801-22 (Ordinary type, near the feet).
PS-035	Common	E (90°)	J	NA	NA	2	1	0	3	PS-035-a: T103-2 (saucer, as cover of 035-b); PS-035-b: E801-2 (Ordinary type, at right of skull); PS-035-c: E801-NA (Ordinary type).
PS-036	Common	E (80°)	A (Y)	NA	Y	0	0	2	2	PS-035-a: M111-NA (spindle whorl); PS-035-b: M430-NA (a group of 5 big shells).
PS-037	Common	E (100°)	C	NA	NA	0	0	0	0	
PS-038	Common	W (260°)	A (O)	NA	NA	1	0	0	1	PS-038-a: E803-2 (Kinalabasa type, right side of skull).
PS-039	Common	E (90°)	A (O)	NA	NA	1	0	0	1	PS-039-a: E804-3 (kendi type at the left side of skull).

PS-040	Common	E (90°)	A (O)	NA	Y	1	1	0	2	PS-040-a: T112-66 (BW plate at between femurs); PS-040-b: E801-13 (Ordinary type, at left femur).
PS-041	Common	E (90°)	J	NA	NA	2	0	0	2	PS-041-a & b: E801-NA (Ordinary type).
PS-042	Common	E (90°)	A (Y)	NA	NA	0	1	0	1	PS-042-a: T201-11 (Thai bowl by the left hand).
PS-043	Disturbed Bundle	NA	A (O)	NA	NA	1	0	0	1	One individual only. PS-043-a: E800-NA.
PS-044	Common	E (80°)	A (O)	NA	Y	0	0	0	0	
PS-045	Common	E (110°)	C	NA	NA	2	0	0	2	PS-045-a: E801-1 (Ordinary type by the skull); PS-045-b: E801-22 (Ordinary type, near the feet).
PS-046	Common	E (90°)	J	NA	Y	0	0	0	0	
PS-047	Common	E (100°)	A (Y)	NA	NA	2	0	1	3	PS-047-a: E803-22 (Kinalabasa type, near the feet); PS-047-b: E801-20 (Ordinary type at right side of feet); PS-047-c: M512-22 (stone tool near the feet).
PS-048	Common	E (90°)	C	NA	NA	2	0	0	2	PS-048-a: E803-1 (Kinalabasa type, near skull); PS-048-b: E801-22 (Ordinary type, near feet).
PS-049	Common	E (90°)	A (O)	NA	N	2	3	0	5	PS-049-a: T112-77 (BW plate, inverted on the pelvis); PS-049-b: T111-1 (BW bowl, inverted on 049-e as cover); PS-049-c: E801-22 (Ordinary type, near feet); PS-049-d: T204-3 (Thai jarlet, by the left side of skull); PS-049-e: E803-1 (Kinalabasa type, above skull).
PS-050	Common	N (10°)	C	NA	NA	0	0	0	0	
PS-051	Common	E (90°)	A (Y)	NA	Y	1	0	0	1	PS-051-a: E801-NA (Ordinary type).

PS-052	Common	E (90°)	A (O)	NA	NA	0	7	0	7	PS-052 was buried under PS-043. PS-052-a: T205-NA (Thai jarlet); PS-052-b: T109-NA (tea pot); PS-052-c: T169-3 (over-glazed enamel tea cup, at left of skull); PS-052-d: T112-77 (BW plate, upright on pelvis); PS-052-e: T103-11 (saucer, hole bottom, at left palm); PS-052-f: T103-10 (saucer, hole bottom, at right palm); PS-052-g: T205-4 (Thai jarlet, at right upper arm).
PS-053	Common	E (90°)	A (O)	NA	NA	1	1	0	2	PS-053-a: T112-77 (BW plate, inverted near pelvis); PS-053-b: E801 (Ordinary type, between femurs).
PS-054	Skull-only	NA	NA	NA	NA	1	0	0	1	PS-054-a: E800-NA.
PS-055	Jar burial	NA	I	NA	NA	0	1	0	1	PS-055-jar: T944 (a large stoneware jar as container); PS-055-a: T112-NA (as cover of burial jar)
PS-056	Common	E (90°)	A (O)	NA	NA	2	0	0	2	It seemed the legs were cut off. PS-056-a: E804-3 (kendi type, by left of skull); PS-056-b: E801-3 (Ordinary type, by left of skull).
PS-057	Disturbed Bundle	NA	A (O)	NA	NA	1	2	0	3	PS-057-a: T132-55 (monochrome plate, between knees); PS-057-b: T133-1 (monochrome saucer, beyond skull, as cover of 057-c); PS-057-c: E801 (Ordinary type, beyond skull).
PS-058	Common	E (90°)	A (O)	NA	NA	2	1	0	3	PS-058-a: T112-77 (BW plate, at left femur and pelvis); PS-058-b: E803-1 (Kinalabasa type, above skull); PS-058-c: E801-1 (ordinary type, above skull).
PS-059	Common	E (90°)	J	NA	NA	0	0	0	0	
PS-060	Common	E (90°)	C	NA	NA	0	0	0	0	

PS-061	Common	E (90°)	A (Y)	NA	NA	1	3	0	4	PS-061-a: T115-1 (BW jarlet, by the skull); PS-061-b: T112-77 (BW plate, cover on pelvis); PS-061-c: T132-1 (monochrome plate, near skull); PS-061-d: E803-1 (Kinalabasa type, by the skull).
PS-062	Common	E (90°)	C	NA	NA	1	0	1	2	PS-062-a: E803-NA (Kinalabasa type); PS-062-b: M112-NA (net sinker).
PS-063	Skull-only	NA	A (Y)	NA	NA	0	0	0	0	
PS-064	Common	E (90°)	A (O)	NA	NA	0	1	0	1	PS-064-a: T205-1 (Thai jarlet, above the skull).
PS-065	Common	E (90°)	A (Y)	NA	NA	0	2	0	2	PS-065-a: T112-77 (BW plate, inverted on the pelvis); PS-065-b: T113-NA (BW saucer).
PS-066	Common	E (90°)	A (O)	NA	NA	0	0	0	0	
PS-068	Common	E (90°)	A (Y)	NA	NA	3	5	0	8	PS-068-a: T112-99 (BW plate, inverted on left chest and upper arm); PS-068-b: T111-5 (BW bowl, on the left side of the body); PS-068-c: T111-99 (BW bowl, near 068-a); PS-068-d: E803-2 (Kinalabasa type, above right of skull); PS-068-e: T111-2 (BW bowl, as cover of 068-d); PS-068-f: E801-22 (Ordinary type, at feet); PS-068-g: E804-4 (kendi type, near right upper arm); PS-068-h: T141-12 (stoneware bowl, near right femur).
PS-069	Common	E (70°)	A (Y)	NA	N	2	1	0	3	PS-069-a: E803-22 (Kinalabasa type, near feet); PS-069-b: T111-22 (BW bowl, as cover of 069-a); PS-069-c: E801-100 (rim of ordinary EA cover on skull).
PS-070	Common	E (90°)	C	NA	NA	0	0	0	0	
PS-071	Common	N (360°)	A (O)	NA	Y	0	0	0	0	

PS-072	Common	E (100°)	J	NA	NA	2	0	0	2	PS-072-a: E801-2 (Ordinary type, right side of skull); PS-072-b: E801-1 (Ordinary type, above skull).
PS-073	Common	SE (150°)	A (O)	NA	N	1	1	1	3	PS-073-a: T115-5 (BW jarlet, left side of the body); PS-073-b: M111-5 (spindle whorl, by 073-a); PS-073-c: E801-1 (Ordinary type, above skull)
PS-074	Common	E (90°)	A (Y)	NA	N	1	5	1	7	PS-074-a: T115-3 (BW jarlet, by the left side of skull); PS-074-b: M111-5 (spindle whorl, at lower left humerus); PS-074-c: T112-77 (BW plate, inverted on the pelvis); PS-074-d: T133-77 (monochrome saucer, inverted on pelvis, with 074-c); PS-074-e: E801-1 (Ordinary type, above skull); PS-074-f: T111-1 (BW bowl, as cover of 074-e); PS-074-g: T112-66 (BW plate, cover on both legs).
PS-075	Multiple Common	E (75°)	A (O)	NA	NA	1	1	0	2	PS-075/076 were buried together. PS-075-a: T204-12 (Thai jar, at right femur); PS-075-b: E801-1 (Ordinary type, above skull).
PS-076	Multiple Common	NA	C	NA	N	1	0	0	1	PS-075/076 were buried together. PS-076-a: E801-1 (Ordinary type, above the skull).
PS-077	Common	E (75°)	C	NA	NA	0	0	0	0	
PS-078	Common	SE (105°)	A (O)	NA	N	0	1	0	1	PS-078-a: TC, stoneware bowl.
PS-079	Common	N (340°)	A (O)	NA	Y	0	0	0	0	
PS-080	Common	E (90°)	A (O)	NA	NA	0	0	0	0	
PS-081	Common	E (90°)	A (O)	NA	Y	2	0	1	3	PS-081-a: E803-3 (Kinalabasa type, left of skull); PS-081-b: M111-4 (spindle whorl, on the right humerus); PS-081-c: E801-66 (Ordinary type, between upper legs).

PS-082	Common	E (90°)	A (O)	NA	NA	1	0	1	2	PS-082-a: M111-4 (spindle whorl, at right humerus); PS-082-b: E803-1 (Kinalabasa type, above skull).
PS-083	Common	S (180°)	C	NA	NA	0	0	0	0	
PS-084	Common	N (360°)	A (O)	NA	Y	1	0	0	1	PS-084-a: E803-2 (Kinalabasa type, right side of skull).
PS-085	Common	E (90°)	A (O)	NA	N	0	2	0	2	PS-085-a: T111-77 (BW bowl, left side of pelvis); PS-085-b: T111-77 (BW bowl, right side of pelvis).
PS-086	Common	E (80°)	A (O)	NA	Y	0	0	0	0	
PS-087	Common	E (90°)	A (O)	NA	Y (6U6L)	2	0	0	2	PS-087-a: E803-1 (Kinalabasa type, above skull); PS-087-b: E801-1 (Kinalabasa type, above skull).
PS-088	Common	S (160°)	A (O)	NA	N	2	0	1	3	Both hands under pelvis. PS-088-a: E801-2 (Ordinary type, at right side of skull). PS-088-b: E801-1 (Ordinary type, above skull); PS-088-c: M120-99 (over-glazed object, above chest).
PS-089	Common	N (360°)	A (O)	NA	N	2	1	0	3	PS-089-a: E803-22 (Kinalabasa type, at feet); PS-089-b: T111-22 (BW bowl, as cover of 089-a); PS-089-c: E801-2 (Ordinary type, at right side of skull).
PS-090	Headless	E (90°)	A (O)	NA	NA	0	0	0	0	
PS-091	Common	E (90°)	A (O)	NA	N	1	0	0	1	PS-091-a: E801-66 (Ordinary type, between upper legs).
PS-092	Common	N (340°)	C	NA	NA	0	0	0	0	
PS-093A	Multiple Common	NE (60°)	A (O)	NA	NA	0	0	1	1	A bundle skeleton (PS-093B) was at the left side. PS-093-a: M111-4 (spindle whorl, at right humerus).

PS-093B	Multiple Bundle	NA	NA	NA	NA	0	0	0	0	This bundle burial was at the left side of old individual (PS-093A).
PS-094	Jar burial	E (90°)*	I	NA	N	0	1	0	1	PS-094-jar: T244-NA (Thai stoneware jar as burial container); PS-094-a: T131-NA (monochrome bowl, as jar cover).
PS-095	Common	E (70°)	A (O)	NA	NA	0	1	0	1	PS-095-a: T112-77 (BW plate inverted on the pelvis).
PS-096	Common	E (70°)	A (O)	NA	NA	0	2	0	2	PS-096-a: T113-10 (BW saucer, at right palm); PS-096-b: T113-11 (BW saucer, at left palm).
PS-097A	Multiple Jar burial	E (90°)*	I	NA	N	0	2	0	2	PS-097B was on the left side. PS-097A-jar: T244-NA (Thai stoneware jar as burial jar); PS-097A-a: T112-NA (BW plate as cover of burial jar); PS-097A-b: T132-NA (celadon plate inside burial jar).
PS-097B	Multiple Jar burial	W (260°)*	I	NA	N	0	0	0	0	PS-097A was on the right side. PS-097B-jar: T144-NA (stoneware jar as burial jar).
PS-098	Common	E (90°)	A (O)	NA	NA	0	0	1	1	PS-098-a: M215-NA (iron spear).
PS-099	Common	N (350°)	A (O)	NA	N	0	0	0	0	
PS-100A	Multiple Common	E (70°)	A	NA	N	1	0	1	2	PS-100A/B/C were piled together in one pit. PS-100C was on the top. Grave goods were temperately assigned to PS-100A. PS-100A-a: E801-22 (Ordinary type at the feet); PS-100A-b: M205-13 (iron spear at left femur).
PS-100B	Multiple Headless	NA	A	NA	NA	0	0	0	0	See PS-100A.
PS-100C	Multiple Common	NE (40°)	A	NA	NA	0	0	0	0	See PS-100A.

PS-101	Common	E (80°)	A (O)	NA	N	1	1	1	3	PS-101-a: T115-13 (BW jarlet, at left leg); PS-101-b: E801-13 (Ordinary type, at left leg); PS-101-c: M111-8 (spindle whorl, right lower arm).
PS-102	Common	N (360°)	A (O)	NA	Y	0	0	0	0	
PS-103	Jar burial	N (360°)*	I	NA	N	0	2	0	2	PS-103-jar: T244-NA (Thai stoneware jar as burial jar); PS-103-a & b: T133-NA (monochrome saucer);
PS-104A	Multiple Jar burial	E (90°)*	I	NA	N	0	0	0	0	A bundle of bones was beside the burial jar. PS-104A-jar: T244-NA (Thai stoneware jar as burial jar).
PS-104B	Multiple Bundle	NA	NA	NA	NA	0	0	0	0	See PS-104A.
PS-105	Common	E (90°)	A (O)	NA	NA	0	1	0	1	PS-105-a: T131-5 (monochrome bowl, inverted on left humerus).
PS-106	Common	E (90°)	A (O)	NA	NA	1	0	0	1	PS-106-a: E804-33 (kendi type, above feet).
PS-107	Common	E (90°)	A (O)	NA	NA	0	0	0	0	
PS-108	Jar burial	E (90°)*	I	NA	N	0	0	0	0	PS-108-jar: T244-NA (Thai stoneware jar as burial jar).
PS-109	Common	E (90°)	C	NA	NA	0	2	0	2	PS-109-a: T113-77 (BW saucer, inverted on pelvis); PS-109-b: T244-77 (Thai stoneware jar, broken and piled on 109-a).
PS-110	Common	E (90°)	A (O)	NA	Y	0	0	0	0	
PS-111	Common	E (90°)	A (Y)	NA	N	0	0	0	0	

PS-112	Common	E (90°)	C	NA	NA	1	0	0	1	PS-112-a: E800-77 (type unknown, above pelvis).
PS-113	Common	N (360°)	A (Y)	NA	Y (6U0L)	0	0	0	0	
PS-114	Common	E (90°)	C	NA	NA	0	0	0	0	
PS-115	Common	E (90°)	A (O)	NA	NA	0	2	0	2	PS-115-a: T112-77 (BW large plate, on pelvis); PS-115-b: T113-100 (BW saucer, cover on skull).
PS-116	Common	E (90°)	NA	NA	NA	1	0	0	1	PS-116-a: E800-NA (type unknown).
PS-117	Common	E (70°)	A (O)	NA	NA	0	3	0	3	PS-117-a: T112-77 (BW plate, inverted on pelvis); PS-117-b: T113-11 (BW saucer, on left palm); PS-117-c: T113-10 (BW saucer, on right palm).
PS-118	Common	N (360°)	A (O)	NA	N	0	0	0	0	
PS-119	Disturbed Bundle	NA	A (O)	NA	NA	0	0	0	0	
PS-120	Common	E (90°)	A (O)	NA	NA	1	0	0	1	PS-120-a: E804-66 (kendi type, between two upper legs).
PS-121	Common	E (90°)	A (O)	NA	NA	0	0	0	0	
PS-122	Common	E (90°)	A (O)	NA	N	1	0	0	1	PS-122-a: E800-NA (type unknown).
PS-123	Common	E (90°)	A (O)	NA	NA	1	2	0	3	PS-123-a: T205-1 (Thai jarlet, above the skull); PS-123-b: T105-5 (jarlet with cover, at left hand); PS-123-c: E800-1 (type unknown, above skull).
PS-124	Common	N (360°)	A (Y)	NA	N	0	0	0	0	
PS-125	Jar burial	E (90°)*	I	NA	N	0	2	0	2	PS-125-jar: T144-NA (Stoneware jar as burial container); PS-125-a: T113 NA (BW saucer as jar cover); PS-125-b: T113-NA (BW saucer, inverted on skeleton).

PS-126	Common	N (340°)	A	NA	NA	0	0	0	0	
PS-127	Common	E (80°)	NA	NA	N	2	4	0	6	PS-127-a: E803-3 (Kinalabasa type, above left of skull); PS-127-b: T111-3 (BW bowl, as cover of 127-a); PS-127-c: E803-2 (Kinalabasa type, above right of skull); PS-127-d: T111-2 (BW bowl, as cover of 127-c); PS-127-e: T112-77 (BW plate, cover on pelvis); PS-127-f: T112-55 (BW plate, cover on knees).
PS-128	Common	E (90°)	C	NA	NA	1	5	2	8	PS-128-a: T201-4 (Thai bowl, at right arm); PS-128-b: T111-NA (BW bowl); PS-128-c: T113-NA (BW saucer); PS-128-d & e: M221-NA (brass bracelet); PS-128-f: T133-NA (monochrome saucer, cover of 128-h); PS-128-g: T111-NA (BW bowl, filled bones & charcoal); PS-128-h: E800-NA (type unknown).
PS-129	Headless	S (160°)	A (O)	NA	NA	0	0	0	0	
PS-130	Common	S (180°)	J	NA	N	0	0	0	0	
PS-131	Common	E (90°)	A (O)	NA	N	0	0	0	0	
PS-132	Common	SE (150°)	A (Y)	NA	NA	0	0	0	0	
PS-133	Common	E (90°)	A (O)	NA	N	2	1	0	3	PS-133-a: E800-NA (type unknown); PS-133-b: T111-77 (BW bowl, cover on pelvis); PS-133-c: E800-NA (type unknown).
PS-134	Common	E (90°)	A (Y)	NA	N	0	0	0	0	
PS-135	Common	E (100°)	A (Y)	NA	Y	0	0	0	0	
PS-136	Common	E (110°)	C	NA	NA	0	0	0	0	
PS-137	Common	SE (120°)	A (O)	NA	NA	1	0	0	1	PS-137-a: E800-2 (type unknown, above right of skull).

PS-138	Common	E (90°)	A (Y)	NA	NA	0	0	0	0	
PS-139	Common	E (90°)	A (O)	NA	Y	0	2	0	2	PS-139-a: T102-77 (plate, cover on the pelvis); PS-139-b: T131-11 (monochrome bowl, at the left palm).
PS-140	Common	E (110°)	A (O)	NA	NA	0	0	0	0	
PS-141	Common	E (100°)	A (O)	NA	Y	2	0	0	2	PS-141-a: E800-1 (type unknown, above skull); PS-141-b: E800-17 (type unknown, by the left lower leg).
PS-142	Common	E (90°)	A (O)	NA	Y	1	0	0	1	PS-142-a: E800-2 (type unknown, above right of skull).
PS-143	Common	E (90°)	J	NA	NA	1	0	0	1	PS-143-a: E800-1 (type unknown, above the skull).
PS-144	Common	N (350°)	J	NA	NA	2	0	0	2	PS-144-a & b: E800-3 (type unknown, left of skull).
PS-145	Common	E (90°)	A (Y)	NA	N	1	1	3	5	PS-145-a: E804-NA (kendi type); PS-145-b: T131-NA (monochrome bowl); PS-145-c, d, & e: M111-44 (spindle whorl, between lower legs).
PS-146	Common	E (75°)	A (Y)	NA	NA	1	0	0	1	PS-146-a: E800-77 (type known, filled with shells).

Appendix Six

Appendix 6: Summary of mortuary database of Santa Ana, Calatagan

Burial-No.	Type	Orientation	Age	Sex	Tooth-filing	EA	TC	MS	GG	Notes
SA-01	Looted	NA	NA	NA	NA	1	4	1	6	This burial was exposed by land tenant, bones were thrown away. Not counted in analysis. SA-01-a: T102-NA (plate); SA-01-b: T102-NA (plate); SA-01-c: M111-NA (spindle whorl); SA-01-d: E114-NA (KT-s-D1a, kendi type); SA-01-e: T905-NA (jarlet); SA-01-f: T102-NA (small plate).
SA-02	Looted	NA	A (O)	NA	NA	1	1	1	3	This burial was exposed and by land tenant. Not counted in analysis. SA-02-a: E113-NA (KT-s-C); SA-02-b: T202-NA (Thai monochrome plate); SA-02-c: M301-NA (portion of blue glass bracelet).
SA-03	Common	NE (40°)	A	NA	Y	0	0	0	0	
SA-04	Common	NE (45°)	A (Y)	F	Y	0	0	0	0	
SA-05	Common	SE (120°)	C	NA	N	1	0	0	1	SA-05-a: E801-1 (form B, beyond head).
SA-06	Common	NE (50°)	A	NA	Y	1	0	0	1	SA-06-a: E112-44 (KT-a-B, between tibiae).
SA-07	Common	NE (40°)	A	NA	Y	2	2	1	5	SA-07-a: T192-99 (over-glazed enamel plate at chest); SA-07-b: E801-3 (form A, at left of skull); SA-07-c: E112-1 (KT-s-B, beyond the skull); SA-07-d: T101-1 (monochrome bowl as cover of c); SA-07-e: M519-NA (worked stone).

SA-08	Common	NE (45°)	A	NA	Y	2	2	1	5	SA-08-a: E111-44 (KT-a-A, between tibiae); SA-08-b: M111-77 (spindle whorl, at pelvis); SA-08-c: T112-22 (BW plate, beyond feet); SA-08-d: E113-22 (KT-s-C, covered with a bowl 08-e); SA-08-e: T131-22 (monochrome bowl, as cover of 08-d).
SA-09	Disturbed Bundle	NA	NA	NA	NA	3	1	0	4	Bundle burial. SA-09-a: E111-NA (KT-s-A); SA-09-b: E113-NA (KT-s-C, 3 shells inside); SA-09-c: E114-NA (KT-s-D2b); SA-09-d: T112-NA (BW plate).
SA-10	Disturbed	NA	A	NA	NA	1	0	0	1	Disturbed burial, not counted in analysis. SA-10-a: E112-NA (KT-s-B, 3 shell, 3 bones and one coral inside)
SA-11	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. SA-11-a: E113-NA (KT-s-C).
SA-12	Common	NE (45°)	A	NA	NA	1	2	0	3	SA-12-a: T103-22 (hole bottom saucer at right of head); SA-12-b: E111-1 (KT-s-A, behind head); SA-12-c: T112-77 (BW plate, with over-glazed red enamel, inverted on pelvis).
SA-13	Non-skeleton	NA	NA	NA	NA	2	1	0	3	There is no bone found. SA-13-a: E112-NA (KT-s-B, cover by a bowl 13-c); SA-13-b: E801-NA (form A); SA-13-c: T131-NA (monochrome bowl, as cover of 13-a).
SA-14	Common	NE (45°)	A	NA	Y	2	2	0	4	SA-14-a: E114-2 (KT-s-D2a, at right of head); SA-14-b: E111-3 (KT-s-A, at left of head); SA-14-c: T112-44 (BW plate, between tibiae); SA-14-d: T102-NA (plate).
SA-15	Common	NE (60°)	A	NA	Y	0	0	1	1	SA-15-a: M111-4 (spindle whorl, by the right humerus).

SA-16	Common	NE (60°)	C (3-4)	NA	NA	0	3	0	3	Many small shells among grave; this burial is 30cm NW from SA-15. SA-16-a: T122-77 (small white plate inverted on pelvis); SA-16-b: T122-55 (small white plate inverted on knees); SA-16-c: T131-1 (monochrome bowl, behind the skull).
SA-17	Common	SW (225°)	A (Y, 20-30)	NA	Y	1	0	0	1	SA-17-a: E113-2 (KT-s-C, at right of head).
SA-18	Common	NE (45°)	A	F	N	1	2	0	3	There are 2 tuna operculum in grave fill. SA-18-a: E112-22 (KT-s-B, 15cm above feet, upright); SA-18-b: T112-1 (BW plate, direct behind head); SA-18-c: T112-77 (BW plate, inverted over pelvis).
SA-19	Common	NE (50°)	A	NA	Y	0	0	0	0	
SA-20	Headless	NE (45)	A	NA	NA	0	0	0	0	Supine position; cranium missing.
SA-21	Common	NE (45°)	C	NA	NA	1	1	0	2	SA-21-a: E111-22 (KT-s-A, near feet); SA-21-b: T205-22 (Thai jarlet, inside 21-a).
SA-22	Common	NE (50°)	A (O)	F	NA	2	4	0	6	Many small shells around knees under EA (SA-22-b). SA-21-a: T112-77 (BW plate, inverted on pelvis); SA-21-b: E113-55 (KT-s-C, over knees); SA-21-c: E111-13 (KT-s-A, to the left knees); SA-21-d: T112-44 (BW plate, cover over tibiae); SA-21-e: T133-13 (saucer, monochrome, hole bottom, under middle of left femur); SA-21-f: T133-12 (saucer, monochrome, hole bottom, under middle of right femur).
SA-23	Common	NE (50°)	A	NA	NA	1	0	0	1	SA-23-a: E800-44 (form unknown, at between tibiae).
SA-24	Common	NE (35°)	C (4-5)	NA	NA	0	0	0	0	

SA-25	Common	NE (40°)	A (Y, 17-20)	NA	Y (6U0L)	2	0	0	2	Many small shells in grave. SA-25-a: E114-3 (KT-s-D1a, to left of head); SA-25-b: E112-17 (KT-s-B, beside left of left tibia).
SA-26	Common	E (70°)	J (10-13)	NA	N	1	3	0	4	SA-26-a: T205-12 (Thai jarlet, close to right femur); SA-26-b: E111-12 (KT-s-A, at right side of right femur); SA-26-c: T113-12 (BW saucer, to right femur); SA-26-d: T131-13 (monochrome bowl on left femur).
SA-27	Common	SE (130°)	A (Y, 19-22)	NA	Y	0	0	0	0	
SA-28	Headless	SW (220)	A	NA	NA	1	4	1	6	SA-28-a: T144-22 (large jar, near feet); SA-28-b: T131-10 (monochrome bowl, inverted on right hand; SA-28-c: T312-99 (Vietnamese BW plate, near left clavicle & neck); SA-28-d: T205-2 (Thai jerlet, near right shoulder); SA-28-e: E112-NA (KT-s-B); SA-28-f: M217-5 (iron slug near joint of left arm).
SA-29	Common	SW (230°)	A	NA	Y (6U5L)	0	2	1	3	SA-29-a: T132-33 (monochrome plate, inverted over feet); SA-29-b: T111-3 (BW bowl, upright to left of head); SA-29-c: M301-9 (blue glass bracelet).
SA-30	Skull-only	NA	A	NA	NA	1	0	0	1	Skull only; front teeth missing, only molar present. SA-30-a: E111-1 (KT-s-A, beyond the head).
SA-31	Common	NE (30°)	A	NA	Y (4U6L)	1	0	1	2	SA-31-a: E113-22 (KT-s-C, near feet); SA-31-b: M218-22 (iron point, near feet).
SA-32	Common	NA	NA	NA	NA	1	0	0	1	SA-32-a: E111-NA (KT-s-A, 11 shells inside).
SA-33	Common	SW (215°)	A	NA	Y (4U?L)	2	0	0	2	SA-33-a: E111-NA (KT-s-A); SA-33-b: E800-NA (form unknown).

SA-34	Common	NE (40°)	A	NA	N	0	0	0	0	
SA-35	Common	NE (40°)	A	NA	Y (6U?L)	0	0	0	0	
SA-36	Common	SE (135°)	A (Y)	NA	Y (2U0L)	2	0	0	2	Both hands underneath pelvis. SA-36-a: E113-77 (KT-s-C, upright over the pelvis); SA-36-b: E112-33 (KT-s-B, upright over the feet).
SA-37	Common	NE (45°)	A (Y)	NA	Y	0	0	0	0	Big bulk of corals and a large rock above the skull; one big coral above feet.
SA-38	Common	NE (30°)	A (O)	NA	NA	0	0	0	0	Teeth missing
SA-39	Common	SE (135°)	A (Y)	NA	Y (6U?L)	2	1	0	3	Different kinds of shells are mixed with grave fill. SA-39-a: T122-77 (white plate, inverted on right part of pelvis); SA-39-b: E111-16 (KT-s-A, at upright on the distal end of right tibia); SA-39-c: E113-17 (KT-s-C, upright, beside distal end of left tibia).
SA-40	Common	SW (230°)	J	NA	NA	0	1	2	3	No teeth found. SA-40-a: T104-22 (jar, upright off feet); SA-40-b: M301-11 (blue glass bracelet, on left wrist); SA-40-c: M111-13 (spindle whorl, near left femur).
SA-41	Common	NE (55°)	J (7-10)	NA	N	0	2	0	2	SA-41-a: T112-77 (BW plate, inverted on pelvis); SA-41-b: T112-66 (BW plate, upright between femurs).
SA-42	Common	N (20°)	A (O)	NA	NA	0	1	0	1	Teeth missing. SA-42-a: T112-77 (BW plate, inverted on pelvis).

SA-43	Common	NE (40°)	C	NA	N	2	5	3	10	SA-43-a: T112-100 (BW plate, inverted on the face); SA-43-b: T133-11 (monochrome saucer, inverted on left palm); SA-43-c: M303-10 (beads, various kinds, at right wrist); SA-43-d: T133-77 (monochrome saucer, inverted on pelvis); SA-43-e: T133-55 (monochrome saucer, inverted on knees); SA-43-f: E111-22 (KT-s-A, just beyond feet); SA-43-g: E804-22 (kendi type, next to 43-f); SA-43-h: M111-22 (spindle whorl, near 43-f); SA-43-i: M215-22 (iron blade, near 43-f); SA-43-j: T909-22 (small cover bowl, near 43-f).
SA-44	Multiple Headless	NE (60)	A	NA	NA	1	0	0	1	SA-44 was in supine position. A jar burial (SA-45) was buried on the right-hand side. SA-44-a: E116-NA (KT-s-E1).
SA-45	Multiple Jar burial	NA	C (3-5)	NA	NA	1	4	0	5	A large half Chinese stoneware jar (SA-45-jar) as burial container. Body was interred inside, as supine position. SA-45-a: T125 (white jarlet, inside burial jar); SA-45-b: T121 (white bowl, inside burial jar); SA-45-c: T113 (BW saucer, inside burial jar); SA-45-d: T113 (BW saucer, inside burial jar); SA-45-e: E111 (KT-s-A, outside the button of burial jar).
SA-46	Common	SE (125°)	A	NA	N	2	1	0	3	SA-46-a: E801-17 (ordinary, upright on left tibia); SA-46-b: T113-100 (BW saucer, invert over the mouth); SA-46-c: E111-3 (KT-s-A, on left side of skull).
SA-47	Common	E (70°)	A (O)	NA	NA	2	2	0	4	Very old body, no teeth found. SA-47-a: E111-5 (KT-s-A, upright over left humerus); SA-47-b: E114-3 (KT-s-D2b, beside 47-a, near shoulder); SA-47-c: T101-33 (bowl, upside down the feet); SA-47-d: T112-77 (BW plate, upside down on the pelvis).

SA-48	Common	SW (220°)	C	NA	N	0	3	0	3	SA-48-a: T112-NA (BW plate); SA-48-b: T112-77 (BW plate, inverted on the pelvis); SA-48-c: T104-22 (jar, upright off the feet).
SA-49	Common	NA	A	NA	NA	0	0	0	0	
SA-50	Headless	NE (50)	A	NA	NA	0	0	0	0	Supine position; headless
SA-51	Common	SE (125°)	A (O)	NA	N	0	0	0	0	
SA-52	Common	SE (125°)	J	NA	N	0	0	2	2	SA-52-a & b: M301-11 (blue glass bracelet on left wrist)..
SA-53	Common	SE (135°)	A (O)	NA	N	0	0	0	0	
SA-54	Common	NA	A (O)	NA	N	1	1	0	2	SA-54-a: T132-3 (monochrome dish, beside left of skull); SA-54-b: E804-2 (kendi type, beside right of skull).
SA-55	Common	SE (130°)	J	NA	N	0	1	2	3	SA-55-a: T112-77 (BW plate, inverted on pelvis); SA-55-b & c: M301-10 (blue glass bracelet at right wrist).
SA-56	Jar burial	NA	C	NA	NA	0	0	0	0	Unknown type of burial jar (SA-56-jar), skeleton highly disintegrated
SA-57	Common	SW (205°)	A (O)	NA	N	2	0	1	3	SA-57-a: E114-3 (KT-s-D1a, above left of skull); SA-57-b: M111-16 (spindle whorl, at right tibia); SA-57-c: E800-33 (type unknown, inverted over the feet).
SA-58	Common	SE (140°)	A	NA	N	0	0	0	0	

SA-59	Common	NE (35°)	I	NA	NA	3	1	0	4	SA-59-a: E113-NA (KT-s-c, upright); SA-59-b: T131-77 (monochrome bowl, upright at the left side of pelvis); SA-59-c & d: E800-1 (type unknown, away from the skull).
SA-60	Common	NE (60°)	A (O)	F	N	1	1	2	4	SA-60-a: T131-100 (monochrome bowl, on frontal bone); SA-60-b & d: M301-NA (keeled blue glass bracelet); SA-60-d: E114-2 (KT-p-D2, upright, right of skull).
SA-61	Common	SE (155°)	A	F	Y (6U6L)	0	0	1	1	Right palm supine beneath right pelvic; left palm beside left pelvic. SA-61-a: M301-11 (keeled blue glass bracelet at left wrist).
SA-62	Common	NE (50°)	A (O)	NA	NA	0	0	0	0	Skeleton under large coral lime; both hand under the pelvis.
SA-63	Common	NE (45°)	A (O)	NA	NA	0	0	1	1	Skeleton was intruded by tree roots; no teeth found; R. palm below pelvic. SA-63-a: M303-17 (41 beads around proximal end of left tibia).
SA-64	Common	NE (30°)	A	F	Y (5U6L)	2	0	1	3	Both hands under pelvis. SA-64-a: E114-8 (KT-s-D1a, at distal end of right tibia); SA-64-b: E112-NA (KT-s-B); SA-64-c: M111-10 (spindle whorl below right wrist).
SA-65	Common	NE (65°)	C	NA	N	2	4	0	6	SA-65-a: E112-17 (KT-s-B, along left foot); SA-65-b: E111-17 (KT-s-A, along left foot); SA-65-c: T112-44 (BW plate, on tibiae with 65-f); SA-65-d: T111-17 (BW bowl, as cover of 65-b); SA-65-e: T105-18 (jarlet at right foot); SA-65-f: T112-44 (BW plate, on tibiae with 65-c, 65-f is larger than 65-c).
SA-69	Common	NE (60°)	A	NA	Y	0	2	2	4	SA-69-a: T235-3 (Thai light green jarlet at left of skull); SA-69-b: T132-99 (celedon plate, upside down on chest); SA-69-c: M111-17 (spindle whorl, along left tibia); SA-69-d: M111-1 (spindle whorl, north of skull).

SA-70	Common	SE (135°)	A	NA	Y	0	1	0	1	SA-70-a: T111-99 (BW bowl, lying on side over chest).
SA-71A	Multiple Headless	SW (210)	A	NA	NA	0	0	0	0	Supine position; skull and right torso missing; signs of cuts on left leg bone. The skeleton seems to be re-interred (?).
SA-71B	Multiple Flexed	NE (55)	A	NA	Y (4U4L)	0	0	0	0	The upper torso in supine position. The left leg crossed over the right leg, and lower arms bend over chest.
SA-72A	Multiple Semi-flexed	NE (45)	J	NA	N	1	1	1	3	SA-72A/B was two semi-flexed juveniles multiple grave. SA-72A was left side buried, facing SA-72B. Stoneware and earthenware stove sherds were used as grave marker; heap of shells accompanied. SA-72A-a: E801-NA (ordinary pot sherds inside 72A-b); SA-72A-b: T131-NA (monochrome bowl); SA-72A-c: M430-NA (heap of shell).
SA-72B	Multiple Semi-flexed	NE (55)	J	NA	N	0	0	0	0	See above.
SA-073	Common	NE (50°)	A	NA	NA	2	0	4	6	SA-73-a: M511-21 (stone statue, lying on its side above 10cm above left foot); SA-73-b: E114-21 (KT-s-D1a, upright beside 73-a); SA-73-c: E111-20 (KT-s-A, beyond right foot); SA-73-d: M512-NA (stone implement); SA-73-e: E800-NA (sherds); SA-73-f: M430-NA (shell form heap with 73-e).
SA-074	Common	SW (225°)	A	NA	NA	0	0	0	0	

Appendix Seven

Appendix 7: Summary of mortuary database of Talisay, Calatagan

Burial-No.	Type	Orientation	Age	Sex	Tooth-filing	EA	TC	MS	GG	Notes
T-001	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. Not accounted in analysis. T-001-a: E800-NA (unknown type).
T-002	Common	N (360°)	A (O)	NA	NA	1	2	1	4	T-002-a: T132-77 (monochrome plate, on pelvis); T-002-b: M111-77 (spindle whorl, left side of pelvis); T-002-c: E801-16 (ordinary type, near right lower leg); T-002-d: T205-10 (Thai jarlet, near right foot).
T-004	Common	S (170°)	A (O)	NA	NA	1	0	1	2	T-004-a: M111-1 (spindle whorl, behind skull); T-004-b: E801-33 (ordinary type, over feet).
T-005	Common	N (20°)	A (20-30)	NA	NA	4	1	0	5	T-005-a: T105-1 (jarlet, behind skull); T-005-b & c: E803-22 (Kinalabasa type, near feet); T-005-d & e: E801-22 (ordinary type, near feet).
T-006	Common	W (270°)	A	NA	Y	0	0	0	0	
T-007	Common	N (10°)	A	NA	Y (6U6L)	0	0	1	1	T-007-a: M301-9 (glass bracelet, at left lower arm).
T-008	Disturbed Bundle	NA	A	NA	NA	0	0	0	0	There are more than one individual in this burial.
T-009	Common	NA	A	NA	Y	1	3	1	5	T-009-a: T205-NA (Thai jarlet); T-009-b: T201-NA (Thai bowl); T-009-c: T201-NA (Thai bowl); T-009-d: M215-NA (iron blade); T-009-e: E801-NA (ordinary type).
T-010	Common	N (10°)	A (Y)	NA	NA	0	0	0	0	
T-011	Common	N (350°)	A	NA	Y	1	1	0	2	T-011-a: T112-77 (BW plate, inverted on pelvis); T-011-b: E801-22 (ordinary type, near feet).
T-012	Non-skeleton	NA	NA	NA	NA	0	1	0	1	There is no bone found. T-012-a: T115-NA (BW jarlet).

T-013	Headless	N (15°)	A	M	NA	0	2	0	2	T-013-a: T201-14 (Thai bowl, on right knee); T-013-b: T201-55 (Thai bowl, inverted on knees).
T-014	Headless	N (360°)	A	NA	NA	0	2	0	2	T-014-a: T201-55 (Thai bowl, inverted on knees); T-014-b: T201-55 (Thai bowl, inverted on knees).
T-017	Common	N (360°)	J	NA	NA	0	0	0	0	
T-018	Common	NA	NA	NA	NA	1	0	1	2	T-018-a: E801-22 (ordinary type, near feet); T-018-b: M903-99 (13 beads, on chest).
T-019	Common	NA	NA	NA	NA	0	1	0	1	T-019-a: T204-NA (Thai jar).
T-020	Common	N (10°)	A	NA	NA	0	6	1	7	T-020-a: T144-16 (brown jar, along right lower leg); T-020-b: T131-16 (monochrome bowl, by right lower leg); T-020-c: T111-16 (BW bowl, by right lower leg); T-020-d & e: T131-16 (monochrome bowl, by right lower leg); T-020-f: T131-13 (monochrome bowl, by left upper leg); T-020-g: M111-15 (spindle whorl, beside left knee).
T-021	Headless	N (355°)	A	NA	NA	0	0	0	0	
T-022	Common	N (350°)	A	NA	NA	0	1	0	1	T-022-a: T201-22 (Thai bowl, near feet).
T-023	Common	N (5°)	A	NA	NA	0	0	0	0	
T-024	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. T-024-a: E800-NA (unknown type).
T-025	Common	N (5°)	A (Y)	NA	NA	1	0	0	1	T-025-a: E801-22 (ordinary type, near feet).
T-026	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. T-026-a: E800-NA (type unknown).
T-027	Common	N (360°)	A (20-25)	NA	Y	0	0	0	0	

T-030	Common	N (360°)	J	NA	NA	2	5	2	9	T-030-a & b: E801-NA (ordinary type); T-030-c, d, & e: T131-NA (monochrome bowl); T-030-f: T205-NA (Thai jarlet); T-030-g: T141-NA (brown bowl); T-030-h: M218-NA (iron tool); T-030-i: M111-NA (spindle whorl).
T-031	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. T-031-a: E800-NA (unknown type).
T-032	Common	N (360°)	A	NA	NA	0	2	0	2	T-032 intruded into T-033. T-032-a: T112-77 (BW plate, inverted on pelvis); T-032-b: T205-8 (Thai jarlet, near right hand).
T-033	Disturbed	NA	A	NA	NA	2	2	0	4	T-033 was intruded by T-032. T-033-a: E801-NA (ordinary type); T-033-b: T111-NA (BW bowl); T-033-c: E800-NA (type unknown); T-033-d: T111-NA (BW bowl).
T-034	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. T-034-a: E800-NA (type unknown).
T-035	Non-skeleton	NA	NA	NA	NA	0	2	0	2	There is no bone found. T-035-a & b: T163-NA (over-glazed saucer).
T-036	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. T-036-a: E800-NA (type unknown).
T-037	Common	N (360°)	A	M	NA	0	2	0	2	T-037-a & b: T201-14 (Thai bowl, on right knee).
T-038	Common	NA	A	NA	NA	2	2	0	4	T-038-a: T205-1 (Thai jarlet, behind skull); T-038-b & c: E801-21 (ordinary type, by left of feet); T-038-d: T131-19 (monochrome bowl, inverted on left foot).
T-039	Non-skeleton	NA	NA	NA	NA	2	2	0	4	There is no bone found. T-039-a: T112-NA (BW plate); T-039-b: T105-NA (jarlet); T-039-c & d: E800-NA (type unknown).

T-040	Common	N (360°)	J	NA	NA	2	3	3	8	T-040-a: T145-NA (brown jarlet); T-040-b: T112-NA (BW plate); T-040-c: T132-NA (monochrome plate); T-040-d, e, & f: M511-NA (stone statue); T-040-g: E801-NA (ordinary type); T-040-h: E803-NA (Kinalabasa type).
T-041	Common	N (5°)	NA	NA	NA	0	2	0	2	T-041-a & b: T163-NA (over-glazed saucer).
T-042A	Multiple Skull-only	NA	J	NA	NA	0	0	0	0	Two juvenile skulls in a round hole, one facing southwest, another facing southeast, seemed face to face.
T-042B	Multiple Skull-only	NA	J	NA	NA	0	0	0	0	Two juvenile skulls in a round hole, one facing southwest, another facing southeast, seemed face to face.
T-044	Common	N (360°)	A	NA	Y (?U5L)	3	1	0	4	T-044-a: T162-77 (red over-glazed plate, over pelvis); T-044-b: E803-22 (Kinalabasa type, away from feet); T-044-c: E801-33 (ordinary type, over feet); T-044-d: E801-22 (ordinary type, near feet).
T-045	Common	S (180°)	A	NA	Y	2	7	1	10	T-045-a: T112-77 (BW plate, inverted on pelvis); T-045-b: T111-11 (BW bowl, on left palm); T-045-c: T111-10 (BW bowl, on right palm); T-045-d: M111-14 (spindle whorl, by right knee); T-045-e: E801-22 (ordinary type, away from feet); T-045-f: E803-22 (Kinalabasa type, away from feet); T-045-g: T111-22 (BW bowl, as cover of 045-f); T-045-h: T205-20 (Thai jarlet, near right foot); T-045-i: T132-20 (monochrome plate, near right foot); T-045-j: T112-20 (BW plate, near right foot).
T-046	Non-skeleton	NA	NA	NA	NA	2	2	0	4	There is no bone found. T-046-a & b: E800-NA (type unknown); T-046-c: T111-NA (BW bowl); T-046-d: T112-NA (BW plate).

T-048	Common	N (360°)	A	NA	N	2	2	1	5	Two hands were under pelvis. T-048-a: E804-NA (kendi type); T-048-b: E801-NA (ordinary type); T-048-c: T103-NA (saucer, as cover of 048-a); T-048-d: M215-NA (iron spear); T-048-e: T165-NA (over-glazed jarlet).
T-049	Non-skeleton	NA	NA	NA	NA	0	1	1	2	There is no bone found. T-049-a: T112-NA (BW plate); T-049-b: M301-NA (green glass bracelet).
T-050	Headless	N (360°)	A (O)	NA	NA	1	1	2	4	No skull but a large stone placed at the place of skull. T-050-a: T132-77 (monochrome plate, on pelvis); T-050-b: M512-9 (stone tool, by left lower arm); T-050-c: M510-100 (stone, at the position of skull); T-050-d E801-NA (ordinary type).
T-051A	Disturbed Multiple Common	N (360°)	A (O)	F	NA	2	2	1	5	T-051B was intruded and disturbed by T-051A. Grave goods of two burials might mix up. T-051C was a skull placed near the right knee of T-051A. T-051A-a: T112-NA (BW plate); T-051A-b: T113-NA (BW saucer); T-051A-c & d: E801-22 (ordinary type, near feet); T-051A-e: M111-NA (spindle whorl).
T-051B	Disturbed Multiple	NA	NA	NA	NA	0	0	0	0	T-051B was intruded and disturbed by T-051A. Grave goods of two burials might mix up.
T-051C	Disturbed Multiple Skull-only	NA	A	NA	NA	0	0	0	0	T-051C was a skull placed near the right knee of T-051A.
T-052	Common	NA	C	NA	NA	1	3	0	4	T-052-a & b: T101-NA (bowl); T-052-c: T205-NA (Thai jarlet); T-052-d: E801-NA (ordinary type).
T-053	Non-skeleton	NA	NA	NA	NA	2	1	1	4	There is no bone found. T-053-a: T205-NA (Thai jarlet); T-053-b & c: E800-NA (type unknown); T-053-d: M410-NA (animal bone).
T-054	Common	S (170°)	A	NA	NA	0	0	0	0	

T-055	Common	N (360°)	A	NA	NA	2	4	0	6	T-055-a & b: E800-NA (type unknown); T-055-c, d & e: T111-NA (BW bowl); T-055-f: T132-NA (monochrome plate).
T-056	Common	S (180°)	A	NA	NA	2	0	0	2	T-056-a: E801-NA (ordinary type); T-056-b: E804-NA (kendi type).
T-057	Common	N (360°)	A (O)	NA	NA	0	0	0	0	
T-058	Common	N (360°)	A	NA	Y	2	0	0	2	T-058-a: E804-NA (kendi type); T-058-b: E800-NA (type unknown).
T-061	Common	N (360°)	A	NA	NA	5	3	0	8	T-061-a: E801-1 (ordinary type, away from skull); T-061-b: E801-3 (ordinary type, left side of skull); T-061-c: T111-10 (BW bowl, inverted on right palm); T-061-d: T133-11 (monochrome saucer, inverted on left palm); T-061-e: T205-66 (Thai jarlet, between upper legs); T-061-f: E808-44 (imitated plate, on lower legs); T-061-g & h: E801-21 (ordinary type, near left foot).
T-062	Common	N (360°)	A	NA	NA	1	2	0	3	T-062-a: T201-10 (Thai bowl, inverted on right palm); T-062-b: T201-15 (Thai bowl, beside left knee); T-062-c: E801-22 (ordinary type, near feet).
T-063	Skull-only	NA	A	NA	N	0	0	0	0	
T-064	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. T-064-a: E800-NA (type unknown).
T-065	Non-skeleton	NA	NA	NA	NA	2	0	0	2	There is no bone found. T-065-a & b: E800-NA (type unknown).
T-067	Common	N (360°)	A	NA	NA	0	0	0	0	
T-068	Common	N (360°)	A	F	NA	1	3	3	7	T-068-a: T112-NA (BW plate); T-068-b: T201-22 (Thai bowl, at feet); T-068-c: T201-44 (Thai bowl, between lower legs); T-068-d: M303-11 (12 greenish glass beads, at left wrist); T-068-e: M301-11 (glass bracelet, at left wrist); T-068-f: E800-NA (type unknown); T-068-g: M301-10 (glass bracelet, at right wrist).

T-069	Headless	N (360°)	A	NA	NA	0	2	1	3	No trace of skull, but three molars found near left tibia. T-069-a & b: T201-NA (Thai bowl); T-069-c: M111-5 (spindle whorl, under left upper arm).
T-070	Common	NE (60°)	J	NA	NA	0	0	0	0	
T-071	Non-skeleton	NA	NA	NA	NA	0	1	0	1	There is no bone found. T-071-a: T201-NA (Thai bowl).
T-072	Common	S (180°)	C	NA	NA	0	0	0	0	
T-074	Headless	N (360°)	J	NA	NA	0	2	1	3	There was an iron arrow (074-c) on the right humer. T-074-a: T201-17 (Thai bowl, at left lower leg); T-074-b: T201-16 (Thai bowl, at right lower leg); T-074-c: M215-4 (iron arrow, beside right upper arm).
T-075	Headless	N (360°)	J	NA	NA	0	2	1	3	T-075-a: T201-NA (Thai bowl); T-075-b: T132-NA (monochrome plate); T-075-c: M430-NA (one large shell).
T-076	Common	N (355°)	A	NA	NA	1	0	0	1	T-076-a: E800-33 (type unknown, on feet).
T-077	Common	N (20°)	C	NA	NA	1	2	0	3	T-077-a: T105-77 (jarlet, on pelvis); T-077-b: T103-77 (saucer, on pelvis); T-077-c: E801-77 (Exx1, on pelvis).
T-078	Common	N (30°)	NA	NA	NA	1	1	1	3	T-078-a: E800-2 (type unknown, away from right of skull); T-078-b: T133-2 (monochrome saucer, right of skull); T-078-c: M111-1 (spindle whorl, away above skull).
T-079	Common	N (360°)	A	NA	NA	0	0	0	0	
T-080	Common	N (360°)	A	NA	Y (4U4L)	1	0	0	1	T-080-a: E800-44 (type unknown, between lower legs).
T-081	Common	N (360°)	C	NA	NA	0	0	0	0	
T-082	Common	NA	J	NA	NA	0	0	2	2	T-082-a: M301-11 (green glass bracelet, at left palm); T-082-b: M301-10 (green glass bracelet, at right palm).

T-083	Common	NA	C	NA	NA	0	0	0	0	
T-084	Common	N (360°)	J	NA	NA	1	0	0	1	T-084-a: E800-3 (type unknown, at left side of skull).
T-085	Common	N (360°)	J	NA	NA	1	3	0	4	T-085-a: T131-NA (monochrome bowl, as cover of 085-b); T-085-b: E803-NA (Kinalabasa type); T-085-c & d: T103-66 (saucer, between upper legs).
T-086	Common	N (360°)	A	NA	NA	2	1	1	4	T-086-a: E800-2 (type unknown, right side of skull); T-086-b: E800-22 (type unknown, near feet); T-086-c: T112-66 (BW plate, between upper legs); T-086-d: M111-NA (spindle whorl).
T-087	Common	N (360°)	A (O)	F	NA	2	0	1	3	T-087-a: E800-22 (type unknown, near feet); T-087-b: E800-21 (type unknown, away from left foot); T-087-c: M301-NA (glass bracelet).
T-088	Common	N (360°)	J	NA	NA	0	1	1	2	T-088-a: T131-66 (monochrome bowl, inverted on upper legs); T-088-b: M111-66 (spindle whorl, under 088-a).
T-089A	Multiple Common	NA	A	NA	NA	1	0	0	1	There is one more skull (T-089B) placed on the feet. T-089A-a: E800-20 (type unknown).
T-089B	Multiple Skull-only	NA	NA	NA	NA	0	0	0	0	T-089B was a skull placed on the feet of T-089B.
T-090	Common	NA	A (Y)	NA	NA	0	0	0	0	
T-091	Common	N (360°)	A	NA	NA	0	2	0	2	T-091-a & b: T131-13 (monochrome bowl, beside left upper leg).
T-092	Non-skeleton	NA	NA	NA	NA	1	2	0	3	There is no bone found. T-092-a: T205-NA (Thai jarlet); T-092-b: T103-NA (saucer); T-092-c: E800-NA (type unknown).

T-093A	Disturbed Multiple Bundle	N (350°)	A	NA	NA	2	3	2	7	There were at two individuals in this burial. Bones were bundled at two corners. T-093A-a: E800-NA (type unknown); T-093A-b & c: M215-NA (iron spear); T-093A-d: T112-NA (BW plate); T-093A-e: E800-NA (type unknown); T-093A-f: T103-NA (saucer); T-093A-g: T112-NA (BW plate).
T-093B	Common	N (5°)	A	NA	NA	0	1	0	1	T-093B-a: T131-66 (monochrome bowl, between upper legs).
T-094	Headless	N (15°)	A	NA	NA	1	2	0	3	Northwest corner of T-094 was intruded by T-096. Skull and neck bones were probably removed. T-094-a: E800-NA (type unknown); T-094-b & c: T131-NA (monochrome bowl).
T-095	Non-skeleton	NA	NA	NA	NA	1	2	0	3	There is no bone found. T-095-a: E800-NA (type unknown); T-095-b & c: T131-NA (monochrome bowl).
T-096	Common	N (350°)	C	NA	NA	1	0	0	1	Northeast corner of T-096 intruded into T-007, and Southeast corner into T-094. T-096-a: E800-22 (type unknown, near feet).
T-097	Common	N (360°)	C	NA	NA	1	2	0	3	T-097-a: E800-NA (type unknown); T-097-b & c: T131-BA (monochrome bowl).
T-098	Common	N (360°)	J	NA	NA	0	0	0	0	
T-099	Headless	N (5°)	A (Y)	NA	NA	1	3	0	4	Skull missing, and an EA vessel was the position of skull. T-099-a: T131-44 (monochrome bowl, inverted at lower legs); T-099-b: T131-12 (monochrome bowl, by right upper leg); T-099-c: T135-1 (monochrome jarlet, near skull); T-099-d: E800-100 (type unknown, at the position of skull).
T-100	Common	S (180°)	A	NA	NA	0	0	0	0	

T-101	Common	N (360°)	J	NA	NA	0	2	3	5	T-101-a & b: T131-NA (monochrome bowl); T-101-c & d: M201-3 (metal bracelet, at left shoulder); T-101-e: M430-99 (one large shell on chest).
T-102	Common	S (180°)	A	NA	NA	1	2	0	3	T-102-a: T144-21 (stoneware jar, near left foot); T-102-b: E803-16 (Kinalabasa type, by right lower leg); T-102-c: T205-1 (Thai jarlet, near top of skull).
T-103	Common	N (360°)	A (O)	NA	NA	4	3	0	7	T-103-a: T144-22 (large stoneware jar, away from feet); T-103-b: E803-22 (Kinalabasa type, away from feet); T-103-c: T112-77 (BW plate, inverted on pelvis); T-103-d: E800-NA (type unknown); T-103-e: E801-22 (ordinary type, away from feet); T-103-f: T132-NA (monochrome plate); T-103-g: E808-22 (imitated saucer type, cover of 103-a).
T-105	Common	NA	A (Y)	NA	NA	0	1	0	1	T-105-a: T144-NA (stoneware jar).
T-106	Non-skeleton	NA	NA	NA	NA	1	2	0	3	There is no bone found. T-106-a: T144-NA (stoneware jar); T-106-b: T103-NA (saucer); T-106-c: E804-NA (kendi type).
T-107	Common	N (5°)	J	NA	NA	0	0	0	0	
T-108	Common	S (185°)	A	NA	NA	1	2	0	3	T-108-a: T144-NA (stoneware jar); T-108-b: T131-NA (monochrome bowl); T-108-c: E800-NA (type unknown).
T-109	Common	N (355°)	A	NA	N	0	0	0	0	
T-110	Common	NW (335°)	C	NA	NA	1	0	0	1	T-110-a: E804 (kendi type).
T-111	Common	NA	NA	NA	NA	0	1	0	1	T-111-a: T205-NA (Thai jarlet).

T-112	Skull-only	NA	J	NA	N	0	0	0	0	Only trace of skull presented.
T-113	Looted	NA	NA	NA	NA	0	0	0	0	
T-114	Looted	NA	J	NA	NA	0	0	0	0	
T-115	Common	N (5°)	J	F	Y (4U2L)	0	0	3	3	T-115-a & b: M301-11 (green glass bracelet, at left wrist); T-115-c: M903-11 (3 beads, at left wrist).
T-116	Common	N (10°)	A (Y)	NA	Y	0	0	0	0	
T-117	Common	N (360°)	C	NA	NA	1	0	0	1	T-117-a: E801-22 (ordinary type, at feet).
T-118	Common	S (185°)	A (O)	F	Y (?U2L)	0	0	1	1	T-118-a: M301-NA (green glass piece).
T-119	Common	N (360°)	A (Y)	NA	Y (6U5L)	3	2	0	5	T-119-a: E808-3 (imitated plate type, left side of skull); T-119-b & c: E803-2 (Kinalabasa type, right side of skull); T-119-d: T135-2 (monochrome jarlet, right of skull); T-119-e: T123-3 (white saucer, left of skull).
T-120	Common	N (360°)	I	NA	NA	0	1	1	2	T-120-a: T103-3 (saucer, left of skull); T-120-b: M430-22 (hip of shells and animal bones, near legs).
T-121	Common	N (355°)	A	NA	Y	0	1	0	1	T-121-a: T205-1 (Thai jarlet, near skull).
T-122	Common	N (355°)	C	NA	NA	0	4	0	4	T-122-a: T205-22 (Thai jarlet, near feet); T-122-b: T112-22 (BW plate, at feet); T-122-c: T162-13 (over-glazed plate, inverted on left upper leg); T-122-d: T162-12 (over-glazed plate, inverted on right upper leg).
T-123	Headless	N (350°)	A (Y)	NA	NA	0	2	0	2	T-123-a: T144-77 (stoneware jar, at right side of pelvis); T-123-b: T111-11 (BW bowl, inverted on left palm).

T-124	Common	S (165°)	J	NA	N	0	0	0	0	
T-125	Headless	NA	NA	NA	NA	0	2	0	2	No trace of skull, but few teeth found. T-125-a: T311-10 (Vietnamese BW bowl, at right hand near upper leg); T-125-b: T311-11 (Vietnamese BW bowl, on left palm).
T-126	Common	NA	NA	NA	NA	0	2	2	4	T-126-a & b: T131-NA (monochrome bowl); T-126-c: M512-NA (stone tool); T-126-d: M903-NA (one bead).
T-128	Non-skeleton	NA	NA	NA	NA	0	1	0	1	There is no bone found. T-128-a: T105-NA (jarlet).
T-129	Common	N (360°)	NA	NA	NA	1	2	0	3	T-129-a: E801-20 (ordinary type, beside right foot); T-129-b: T131-12 (monochrome bowl, by right upper leg); T-129-c: T131-NA (monochrome bowl).
T-130	Common	N (355°)	NA	NA	NA	0	0	1	1	T-130-a: M111-66 (spindle whorl, between upper legs).
T-131	Common	N (20°)	I	NA	NA	1	0	0	1	T-131-a: E801-22 (ordinary type, at feet).
T-132	Common	NW (336°)	I	NA	NA	0	0	0	0	
T-133	Multiple Common	N (360°)	A	NA	NA	0	2	0	2	T-133/135 were buried together. T-135 was at the southwest corner of T-133. T-133-a: T123-1 (white saucer, as cover of 133-b, near skull); T-133-b: T145-1 (Stoneware jarlet, near skull).
T-134	Common	N (15°)	A	NA	Y (6U6L)	2	0	0	2	T-134-a & b: E801-3 (ordinary type, beside left shoulder).
T-135	Multiple Common	N (360°)	C	NA	NA	0	0	0	0	T-133/135 were buried together. T-135 was at the southwest corner of T-133.
T-136	Common	N (360°)	A	NA	NA	1	0	0	1	T-136-a: E801-22 (ordinary type, near feet).

T-137	Common	N (355°)	A	NA	NA	1	2	0	3	T-137 intrude into T-138 by the western part. T-137-a: E801-12 (ordinary type, beside right upper leg); T-137-b: T131-14 (monochrome bowl, on right knee); T-137-c: T131-66 (monochrome bowl, inverted between upper legs).
T-138	Disturbed Multiple Headless	N (355°)	A	NA	NA	0	0	0	0	T-138 was intruded by T-137 by the western part. One skull (T138A) was placed at chest, might be moved to here because of T-137.
T-138A	Disturbed Multiple Skull-only	NA	A	NA	NA	0	0	0	0	T-138A is a skull placed at chest of T-138, might be moved to here because T-138 was intruded by T-137.
T-139	Common	N (360°)	A	NA	NA	0	0	0	0	
T-140	Common	N (10°)	A	NA	NA	0	0	0	0	
T-141	Common	N (15°)	J	NA	NA	1	0	5	6	T-141-a & b: M301-11 (glass bracelet, at left wrist); T-141-c: M903-11 (beads, at left wrist); T-141-d: M301-10 (glass bracelet, at right wrist); T-141-e: M249-100 (gold leaf, on right eye); T-141-f: E800-22 (type unknown, at feet).
T-142	Common	N (345°)	I	NA	NA	0	0	0	0	
T-143	Common	N (360°)	C	NA	NA	0	2	0	2	T-143-a: T131-12 (monochrome bowl, at right upper leg); T-143-b: T131-13 (monochrome bowl, at left upper leg).
T-144	Common	N (15°)	NA	NA	NA	0	0	0	0	
T-145	Common	NA	A	NA	NA	0	0	0	0	

T-146	Common	N (360°)	J	NA	NA	0	1	0	1	T-146-a: T131-13 (monochrome bowl, inverted close to left upper leg).
T-147	Common	N (357°)	A	NA	NA	1	2	0	3	T-147-a: E801-16 (ordinary type, near right lower leg); T-147-b: T111-14 (BW bowl, inverted on right knee); T-147-c: T111-77 (BW bowl, on left part of pelvis).
T-148	Common	S (180°)	C	NA	NA	0	0	0	0	
T-149	Common	N (360°)	J	NA	NA	2	1	0	3	T-149-a: T145-17 (stoneware jarlet, near left lower leg); T-149-b & c: E801-22 (ordinary type, away from feet).
T-150	Common	N (360°)	J	NA	NA	2	2	0	4	T-150-a: E801-22 (ordinary type, near the feet); T-150-b: T113-22 (BW saucer, as cover of 150-a); T-150-c: E801-1 (ordinary type, near the skull); T-150-d: T201-1 (Thai bowl, as cover of 150-c).
T-151	Common	N (360°)	A	NA	Y (?U6L)	1	4	1	6	T-151-a: E801-22 (ordinary type, near feet); T-151-b: T105-66 (jarlet, between upper legs); T-151-c: T111-11 (BW bowl, inverted on left palm); T-151-d: T112-77 (BW plate, inverted on pelvis); T-151-e: T111-10 (BW bowl, inverted on right palm); T-151-f: M111-4 (spindle whorl, beside right upper arm).
T-152	Common	S (180°)	NA	NA	NA	1	1	0	2	T-152-a: E801-17 (ordinary type, beside left lower leg); T-152-b: T131-13 (monochrome bowl, by left upper leg).
T-153	Common	N (360°)	C	NA	NA	2	1	0	3	T-153-a: T105-2 (jarlet, beside right side of skull); T-153-b: E801-1 (ordinary type, away from skull); T-153-c: E801-22 (ordinary type, near feet).
T-154A	Multiple Common	N (360°)	C	NA	N	2	2	0	4	A child skeleton with one extra skull (T-154B) placed beyond the feet. T-154A-a: E801-33 (ordinary type, inverted on the feet); T-154A-b: T105-13 (jarlet, beside left palm); T-154A-c: E801-1 (ordinary type, near skull); T-154A-d: T103-1 (saucer, as cover of 154-c).
T-154B	Multiple Skull-only	NA	NA	NA	NA	0	0	0	0	T154B was placed beyond the feet of T-154A, and facing east.

T-155	Common	N (360°)	A	NA	NA	2	3	0	5	T-155-a: T111-77 (BW bowl, inverted on pelvis); T-155-b: T111-10 (BW bowl, inverted on right palm); T-155-c: T205-3 (Thai jarlet, beside left side of skull); T-155-d: E801-1 (ordinary type, beyond the skull); T-155-e: E801-22 (ordinary type, at feet).
T-156	Common	S (180°)	A	F	NA	2	2	0	4	T-156-a & b: E801-1 (ordinary type, beyond the skull); T-156-c: T205-16 (Thai jarlet, beside right lower leg); T-156-d: T112-77 (BW plate, inverted on pelvis);
T-157	Common	N (360°)	C	NA	NA	0	0	0	0	
T-158A	Multiple Headless	N (15°)	A	NA	NA	0	0	0	0	T-158A/158B/158C were buried together. T-158A was a headless skeleton, with one complete skeleton (T-158B) on its left side and one skull (T-158C) was placed beyond head of T-158B.
T-158B	Multiple Common	N (15°)	A	NA	NA	0	1	0	1	T-158A/158B/158C were buried together. T-158B was a complete skeleton, with one headless skeleton (T-158A) on its right side, and one skull (T-158C) was placed beyond head of T-158B. T-158-a: T111-NA (BW bowl, between 158A left leg and 158B right leg).
T-158C	Multiple Skull-only	NA	A	NA	NA	0	0	0	0	T-158A/158B/158C were buried together. (T-158C was placed beyond head of T-158B.
T-159	Common	E (86°)	A	NA	NA	3	1	0	4	T-159-a: T132-33 (celedon plate, inverted on feet); T-159-b: E801-33 (ordinary type, on feet); T-159-c: E801-12 (ordinary type, on right upper leg); T-159-d: E801-66 (ordinary type, between upper legs).
T-160	Headless	E (85°)	A	M	NA	0	0	0	0	
T-161	Common	N (20°)	A	NA	NA	0	0	0	0	
T-162	Common	N (360°)	J	M	NA	1	0	0	1	T-162-a: E801-19 (ordinary type, inverted on left foot).

T-163A	Multiple Common	N (345°)	A	M	NA	0	0	0	0	T-163A was a complete adult skeleton with three extra skulls)T-163B/C/D).
T-163B	Multiple Skull-only	NA	A	NA	NA	0	0	0	0	T-163B was placed on the lower part of the pelvis of T-163A.
T-163C	Multiple Skull-only	NA	A	NA	NA	0	0	0	0	T-163C was placed beside the left lower leg of T-163A.
T-163D	Multiple Skull-only	NA	A	NA	NA	0	0	0	0	T-163D was placed on the feet of T-163A.
T-164	Common	N (355°)	NA	NA	NA	1	1	1	3	T-164-a: E801-NA (ordinary type); T-164-b: T321-NA (Vietnamese whiteware bowl); T-164-c: M903-NA (7 beads).
T-165	Common	S (180°)	J	NA	NA	2	4	1	7	T-165-a: M209-100 (metal earring, at right part of skull); T-165-b: TC112-1 (BW dish, near skull); T-165-c: T135-88 (monochrome jarlet, on lumbar area); T-165-d: T101-77 (bowl, on pelvis); T-165-e: E800-12 (type unknown, on right upper leg); T-165-f: E800-13 (type unknown, on left upper leg); T-165-g: T113-13 (BW saucer, beside left upper leg).
T-166	Common	N (360°)	A	NA	Y	1	1	0	2	T-166-a: T112-77 (BW plate, inverted on pelvis); T-166-b: E800-20 (type unknown, beside right foot).
T-167	Common	N (340°)	A	NA	Y (4U6L)	0	0	0	0	
T-168	Common	S (180°)	A	NA	Y	1	1	2	4	T-168-a: E801-20 (ordinary type, near right of feet); T-168-b: T201-16 (Thai bowl, at right lower leg); T-168-c: M111-4 (spindle whorl, beside right upper arm); T-168-d: M903-10 (17 beads, at right hand).
T-169	Common	N (360°)	C	NA	NA	1	1	1	3	T-169-a: E800-NA (type unknown); T-169-b: T104-NA (jar); T-169-c: M301-NA (glass bracelet).

T-172	Common	N (360°)	A	NA	NA	0	0	0	0	
T-173	Common	N (360°)	A (O)	NA	NA	1	5	7	13	T-173-a & b: T205-1 (Thai jarlet, near skull); T-173-c: T112-77 (BW plate, on pelvis); T-173-d, e, & f: M301-11 (glass bracelet, at left wrist); T-173-g, h, & i: M301-10 (glass bracelet, at right wrist); T-173-j: T103-66 (saucer, between upper legs); T-173-k: M111-66 (spindle whorl, between upper legs); T-173-l: T305-33 (Vietnamese jarlet, on the feet); T-173-m: E800-22 (type unknown, at feet).
T-174	Common	N (360°)	NA	NA	N	1	2	0	3	T-174-a: T205-88 (Thai jarlet, at lumbar area); T-174-b: E800-66 (type unknown, between upper legs); T-174-c: T112-77 (BW plate, on pelvis).
T-175	Common	N (350°)	NA	M	NA	1	0	1	2	T-175-a: M215-12 (iron blade, beside pelvis); T-175-b: E801-17 (ordinary type, at left lower leg).
T-176	Common	NE (45°)	C	NA	NA	0	0	0	0	
T-177	Common	N (10°)	I	NA	NA	2	0	0	2	T-177-a: E804-77 (kendi type with 4 spouts, on left pelvis); T-177-b: E801-1 (ordinary type, beyond the skull).
T-178	Common	S (200°)	J	NA	NA	1	0	0	1	T-178-a: E801-17 (ordinary type, beside left lower leg).
T-179	Common	S (175°)	C	NA	NA	0	2	0	2	T-179-a & b: T201-77 (Thai bowl, on pelvis).
T-180	Common	N (360°)	J	NA	NA	2	1	0	3	T-180-a & b: E800-NA (type unknown); T-180-c: T112-55 (BW plate, on knees).
T-181	Common	N (10°)	C	NA	NA	0	0	0	0	
T-182	Common	N (360°)	A (O)	NA	NA	2	1	0	3	T-182-a: E801-4 (ordinary type, beside right upper arm); T-182-b: T205-NA (Thai jarlet); T-182-c: E800-NA (type unknown).
T-183	Common	N (360°)	A	NA	NA	0	0	0	0	

T-184	Common	S (180°)	J	NA	N	0	0	0	0	
T-185	Common	N (360°)	A (O)	NA	NA	1	0	0	1	T-185-a: E800-22 (type unknown, at feet).
T-186	Common	E (100°)	A (O)	NA	NA	2	0	0	2	T-186-a: E800-1 (type unknown, beyond skull); T-186-b: E800-22 (type unknown, near feet).
T-187	Common	N (10°)	J	NA	NA	1	0	0	1	T-187-a: E800-NA (type unknown).
T-188	Common	N (5°)	C	NA	NA	2	2	0	4	T-188-a: T113-22 (BW saucer, as cover of 188-b, away from feet); T-188-b: E801-22 (ordinary type, away from the feet); T-188-c: E800-NA (type unknown); T-188-d: T101-NA (bowl).
T-200	Common	N (360°)	A	NA	Y (6U6L)	1	3	0	4	T-200-a: E804-12 (kendi type, beside right upper leg); T-200-b: T135-2 (monochrome jarlet, by the right side of skull); T-200-c: T101-100 (bowl, inverted on skull); T-200-d: T101-77 (bowl, inverted on pelvis).
T-201	Common	N (15°)	A	NA	Y	2	3	0	5	T-201-a: T105-13 (jarlet, beside left hand); T-201-b: E800-55 (type unknown, on knees); T-201-c: T104-22 (jar, at feet); T-201-d: E800-21 (type unknown, left side of feet); T-201-e: T131-22 (monochrome bowl, as cover of 201-c).
T-202	Non-skeleton	NA	NA	NA	NA	1	0	0	1	There is no bone found. T-202-a: E800-NA (type unknown).
T-203	Common	NA	J	NA	NA	0	0	0	0	
T-204	Common	N (15°)	A	NA	Y	2	0	0	2	T-204-a: E801-3 (ordinary type, left of skull); T-204-b: E801-17 (ordinary type, beside of left lower leg).
T-205	Common	N (15°)	NA	NA	NA	0	0	0	0	
T-206	Common	N (355°)	I	NA	NA	0	0	0	0	

Appendix Eight

Appendix Eight
Typology of Earthenwares

Earthenwares, in this research, are those pottery vessels manufactured in the Philippine archipelago. They are either made in local community or exchanged from nearby groups or through inter-islands exchanges. Our knowledge of those Philippine potteries is still very poor and without systematic study yet, except pottery unearthed from Visayan region in recent years (Bacus 1995; Junker 1990a; Nishimura 1992). For the typology analysis of earthenwares found in Calatagan, Main and Fox's (1982) analysis is the most important reference.

Main and Fox's typology is a five-layered system. The first level is a group of material comprised of three "complexes", each with distinctive characteristics showing them to be the products of potters of different pottery-making conventions. These three complexes are: Kay Tomas Complex, Pulong Bakaw Complex, and Intrusive Complex. The second level "type" refers to the potter technique applied to earthenwares, especially to surface. The third to fifth levels are the forms of vessels.

However, the available specimen information in the National Museum's archive does not cover the whole typology. Most specimens are with information up to form only, not including sub- or sub/sub-form data. Moreover, not every form in Main and Fox' system can be found in this research's database. The possible reason is because their typology is based on a study of 987 whole or restorable earthenware vessels from 12 sites in Calatagan, including 344 pieces of much complete grave vessels and hundreds of sherds collection. Thus, this appendix will only summarize those types with available specimen information, not to cover the whole of Main and Fox's typology.

For the purpose of quantitative analysis, this research applies a 3-digit coding system to the typology of earthenwares, which is slightly adapted from Main and Fox's system. For more detail discussion on each type, especially for those sub-types not included in this research, please refers to their book.

The first digit stands for the pottery complex, the second for the surface treatment, and the third for the form. The pottery complex is mainly based on the clay texture of the pottery body. They are, according to Main and Fox (1982: 1), "individual styles of earthenwares, each with distinctive characteristics which show them to be the products of potters of different pottery-making conventions." In this coding system: "1" for Kay Tomas Complex, "2" for Pulong Complex, "3" for Santa Ana Complex, and "9" for others, e.g. intrusive wares in Calatagan.

The secondary digit represents the factors of the surface finish and decoration. Main and Fox (ibid.: 1-2) named it as "pottery type.": "1" for coarse, "2" for plain, "3" for slipped and polish, "4" for incised and/or impressed.

The third digit exemplifies the form, but they stand for different forms between supra-groups. The Kay Tomas slipped and polished group comprises the most various forms, and could not be covered by 1-digit. Considering the unearthed volume of specimen, some forms will be grouped into one number. A structured coding system for the earthenware typology is presents in Table App-8-1.

Among these three kinds of properties of earthenwares, form is the most significant one in appearance, and is chosen to reveal people's attitude toward different types of earthenwares for quantitative analysis. All forms of earthenware pots are thus further grouped to five forms: *Palayok* form (Exx1), *Kinalabasa* form (Exx2), *Kendi-*

like form (Exx3), and others form (Exx4) or unknown form (Exx5) (Table App-8-2). *Palayok* is a present-day Tagalog term which refers to a kind of ordinary, daily used cooking pot. *Kinalabasa* is derived from a present-day Tagalog term "*kalabasa*" which refers to vegetable squash, and *kinalabasa* means like the squash. It is obviously that the grooved body is like the squash form. *Kendi* is a kind of spouted water container of Southeast Asia, often used as daily and ritual purification, during the late 1st and early 2nd millennia AD. The name is derived from the Sanskrit *kundika* (Khoo 1991).

Complex	Type	Form	Description (refer to Main and Fox's typology)
E-100			Kay Tomas Complex (KT)
	E-110		KT-slipped and polished wares (KT-s)
		E-111	KT-s-Form A
		E-112	KT-s-Form B
		E-113	KT-s-Form C
		E-114	KT-s-Form D
		E-116	KT-s-Forms E, F, G, I
		E-117	KT-s-Forms L, N
	E-120		KT-plain wares (KT-p)
		E-121	KT-p-Form A
		E-129	KT-p-others (e.g. lid)
	E-130		KT-incised wares (KT-i)
		E-134	KT-i-Form D
E-200			Pulong Bakaw Complex (PB)
	E-220		PB-plain (PB-p)
		E-221	PB-p-Form A
E-800			Unknown pottery complex
		E-801	Ordinary earthenware pot, *palayok* , similar to Form A and B
		E-803	Earthenware pot with grooves, *Kinalabasa*, similar to Form C
		E-804	Earthenware pot with spouts, *kindi*-like, similar to Form D
		E-808	Earthenware in imitation form of saucer, dish, and plate
		E-809	Earthenware in other forms, e.g. bowl and burial jar
	E-830		
		E-831	Decorated earthenware pot in *palayok* form
E-900			Others
	E-930		Comb-incised wares
		E-931	Comb-incised Form A

Table App-8-1: Typology of earthenwares

Code	Short	Contents
Exx1	*Palayok* form	E111, E112, E121, E221, E801, E831
Exx2	*Kinalabasa* form	E113, E803
Exx3	*Kendi*-like form	E114, E134, E804
Exx4	Others form	E116, E117, E808
Exx0	Form unknown	E110, E130, E800, E930

Table App-8-2: Simplified form table of earthenwares

E-100 (Kay Tomas Complex, KT)

Kay Tomas complex pottery is made of mica-clay minerals which the particles are of volcanic origin. Petrological analysis suggests (Main and Fox 1982: 120-131) that they are locally made but in more than one locality in the area. In terms of surface colour, Kay Tomas complex are red-orange, reddish-grey, or reddish-buff. In general, most wares are made by the paddle-and-anvil technique.

E-110 (Kay Tomas slipped and polished wares, KT-s)

Kay Tomas slipped and polished wares are the most common, also with most varieties in form, earthenwares encountered in Calatagan. Their surfaces are damped and smoothed, then a slip is applied, and finally the body is polished before being fired. The colour of the slip is often red-orange. Most slipped and polished wares have no decoration feature except the vertical grooving and notched flange on certain forms. Very few items are engraved with some kind of script at the shoulders. Main and Fox (ibid.: 21) only mention it briefly, and this piece of information does not appear in my database.

E-111 (Kay Tomas slipped and polished wares, Form A; KT-s-A)[1]

E-111 has a shape similar to the present cooking pot, which is the name *Palayok* form come from, with a restricted, horizontal ellipsoid or ovaloid (upright) body, with everted rim and convex base contour. They are applied

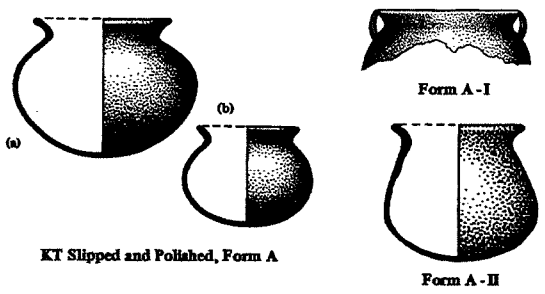

Figure App-8-1: Kay Tomas slipped and polished wares, Form A (Main and Fox 1982, Fig. 10, 11, 12).

[1] All of the drawings of earthenware specimen in this appendix are from Main and Fox's (1982) work.

horizontal polish on rim, upper body, and base. They range between 6-16.25 cm in height, 7.75-21.5 cm in diameter, and 1-8 mm in thickness. E-111 has two variants: KT-s-A-I has two handles, on opposing sides, applied vertically between rim-tip and shoulder, KT-s-A-II is slightly angular at the shoulder.

E-112 (Kay Tomas slipped and polished wares, Form B; KT-s-B)

E-112 is similar to E-111 but with indentation at centre base, and more angular at the body shape than E-111. They are often polished horizontally on rim, vertically on upper body, and basal indentation is polished with base, or polished separately. They range between 6.4-14.25 cm in height, 8.7-19 cm in diameter, and 1-6 mm in thickness.

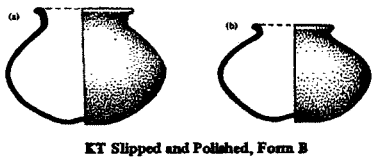

Figure App-8-2: Kay Tomas slipped and polished wares, Form B (Main and Fox 1982, Fig. 13).

E-113 (Kay Tomas slipped and polished wares, Form C; KT-s-C)

E-113 is similar to E-112 but the body is modified by a series of grooves spaced, which is the name *Kinalabasa* form come from. Those grooves, ranging from 6 to 34 with a medial figure of 13, are more or less evenly spaced around the circumference of the body. Length and depth of grooves vary. They range between 5.6-14.5 cm in height, 7.1-22 cm in diameter, and 1-6 mm in thickness.

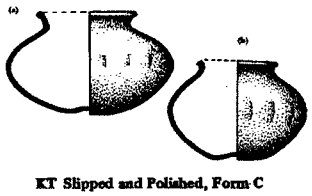

Figure App-8-3: Kay Tomas slipped and polished wares, Form C (Main and Fox 1982, Fig. 14).

E-114 (Kay Tomas slipped and polished wares, Form D; KT-s-D)

Main and Fox did not give a description for this form in general, but describes a variety of sub-form separately. Judging the features from all sub-forms, it is clear that pots with a spout is the most important common character for this form in common. This type is generally known as "*kendi*" in Southeast Asian archaeology.

There are ten sub-forms under this type. The most popular sub-form of E-114 is KT-s-D-I-a, which is shaped like a normal E-112 but with a thing, an upturned spout pressed on at the shoulder. Other variations include applied footring, or with complex contour on rim or shoulder, or the neck and rim become narrow-necked hyperboloid, etc. Their surface treatment and size are similar to other type of Kay Tomas slipped and polished earthenwares.

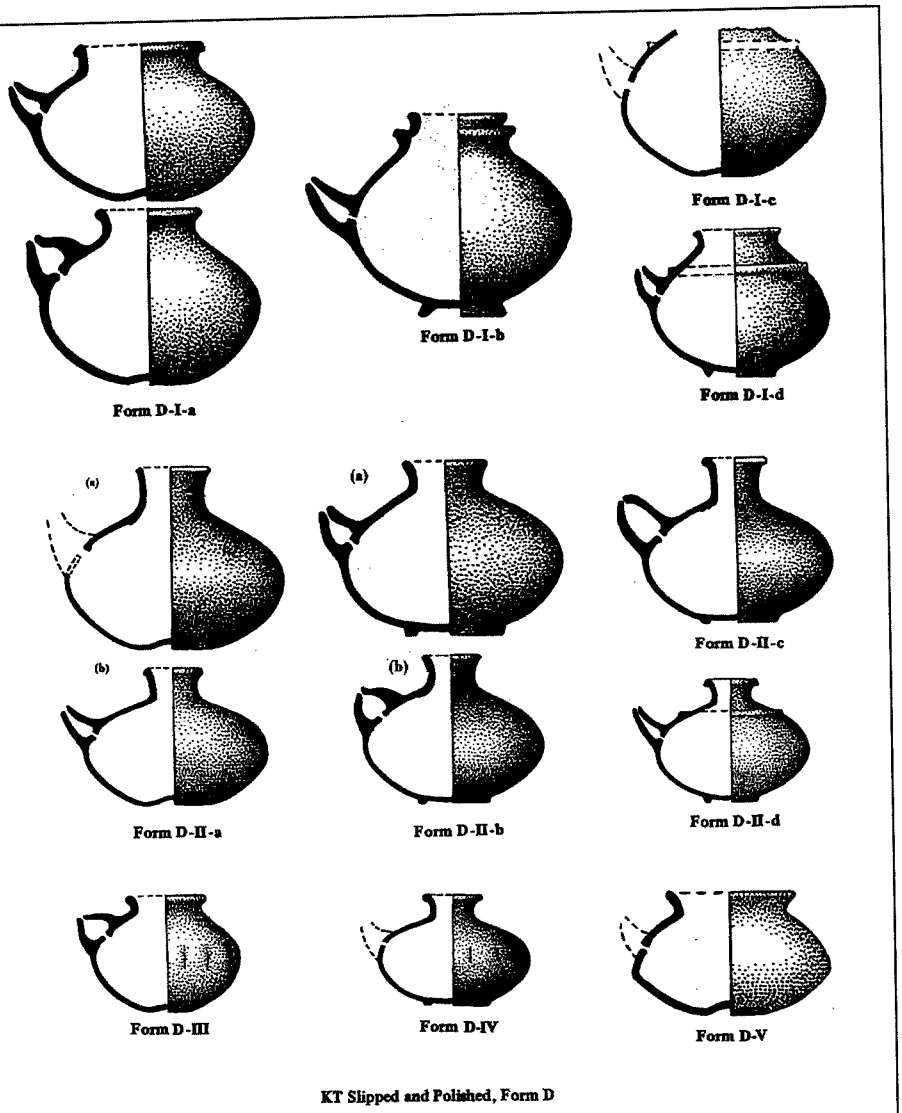

Figure App-8-4: Kay Tomas slipped and polished wares, Form D (Main and Fox 1982, Fig. 15, 16, 17, 18, 19, 20-a, 20-b, 21, 22, 23, and 24).

E-116 (Kay Tomas slipped and polished wares, Form E, F, G, I; KT-s-E-1, KT-s-F, KT-s-G, KT-s-I)

E-116, also E-117, is not one form but a group of miscellaneous vessels under one code, for the convenience of typology and coding. There is only one item for each form in my database, though there were more in Main and Fox's (1982: 31-35) classification.

KT-s-E-1 is like a Form A vessel but with a foot ring. It is 13 cm in height, 16.75 cm in diameter, and 1.75-4 mm in thickness. KT-s-F is also like Form A but with a more upright, ovaloid body, ranging between 16.5-19.5 cm in height, 16.75-19.5 cm in diameter, and 1.75-4 mm in thickness. KT-s-G is similar to Form B but with an orifice and complex rim. It is 10.5 cm in height, 15.5 cm in diameter, and 1.5-3 mm in thickness. KT-s-I is a much bigger vessel with a pear shape body, slightly everted rim, and foot ring. It is 28.8 cm in height, 31.75 cm in diameter, and 3.5-5 mm in thickness.

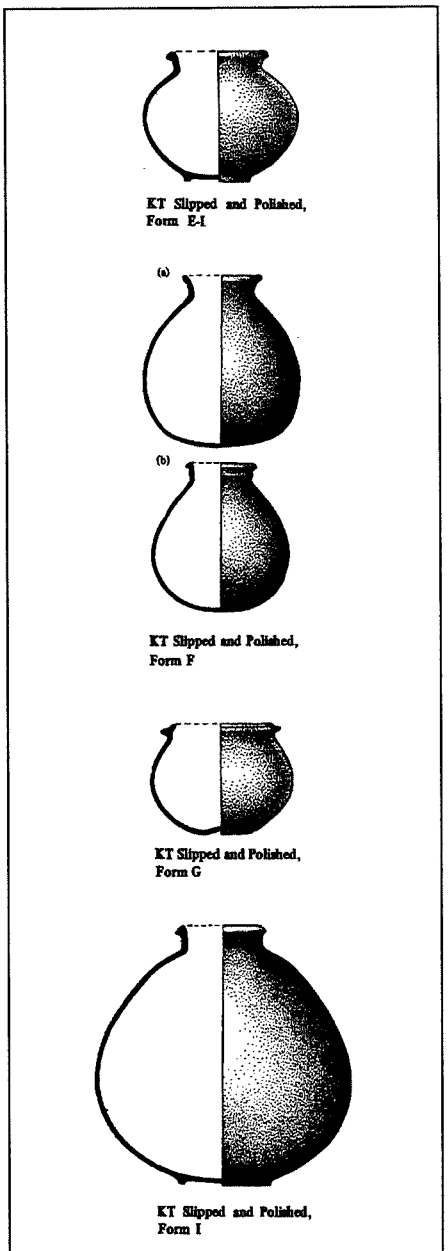

Figure App-8-5: Kay Tomas slipped and polished wares, Form E, F, G, and I (Main and Fox 1982, Fig. 25, 27, 28, 30).

E-117 (Kay Tomas slipped and polished wares, Form L, N; KT-s-L, KT-s-N)

There are only two items under E-117 in my database. They are in a bowl shape, different from the pot shape of E-116. In terms of form shape, these two items are much more like imitation vessels. KT-s-L is a large, deep bowl with foot ring. It is 11.25-15.5 cm in height, 25-34 cm in diameter, and 3-5.7 mm in thickness. There are two specimens in Main and Fox's typology (ibid.: 34-35), only difference is in their size and rim form, but there is no information in my database. KT-s-N is a smaller item in a squat, barrel shaped body with slightly convex, horizontal fluting surface, a slightly convex base and a foot ring. It is 6.26 cm in height, 9.4 cm in diameter, and 5-8 mm in thickness.

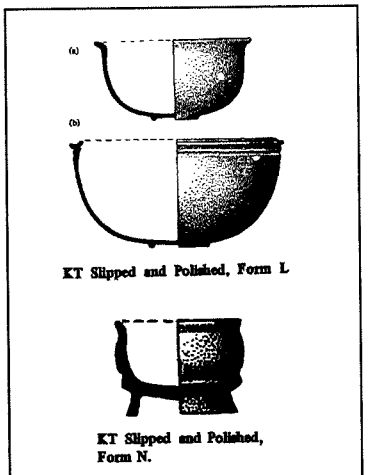

Figure App-8-6: Kay Tomas slipped and polished wares, Form L and N (Main and Fox 1982, Fig. 35 and 37).

E-120 (Kay Tomas plain wares; KT-p)

The surfaces of Kay Tomas plain wares are not slipped and polished. These wares are often in reddish-grey or reddish-buff. Grooving and notched flange are the only decoration applied on certain forms. The variety of forms is similar to, but not as many as slipped and polished wares. In my database, it even shows only two forms. Other forms might lose their information and are classified into unknown complex wares (E-800, see below).

E-121 (Kay Tomas plain wares, Form A; KT-p-A)

In principle, KT plain Form A vessels resemble those of KT-s-A, an upright ovaloid body with everted rim. They range between 11-15 cm in height, 14.3-19.5 cm in diameter, and 1-5.5 mm in thickness.

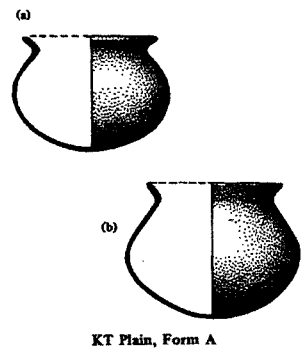

Figure App-8-7: Kay Tomas plain wares, Form A (Main and Fox 1982, Fig. 40).

E-129 (Kay Tomas plain wares, Form lid; KT-p-lid 2)

This form is like a small shallow bowl with inflected contour, and has a knob rising from the centre inside. It is 2.5 cm in height (3 cm to the knob handle), 9.4 cm in diameter, and 3 mm in thickness.

Figure App-8-8: Kay Tomas plain wares, Form lid (Main and Fox 1982, Fig. 49).

E-134 (Kay Tomas incised wares, Form D; KT-i-D)

Kay Tomas incised wares are items with incised, or punctuated in some cases, decoration at the shoulder. In Main and Fox's classification (ibid.: 41-50), their forms comprise ordinary *palayok* and grooved *kinalabasa* pots as well. However, there is only kend-like wares included in my database.

Though E-134 also refers to pot with spout like wares of E-114, but KT-i-D ware has two spouts, as well as two lugs, at opposing sides of the shoulder. A simple, zigzag line pattern is applied on the

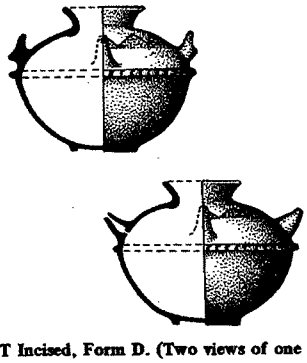

Figure App-8-9: Kay Tomas incised wares, Form D (Main and Fox 1982, Fig. 59).

shoulder, which forms points of a "star" decorating around the neck. In addition, notched flange is applied at the body and foot ring on the base. E-134 ranges between 13.5-17.5 cm in height, 12-17 cm in diameter, and 1.5-10 mm in thickness.

E-141 (Kay Tomas coarse wares, Form A; KT-c-A)

Kay Tomas coarse wares are a group of earthenwares with little effort made to smooth the body wall, thus their surfaces are generally rough in texture, unslipped, unpolished, and undecorated. There is only one item, a burial jar, found in grave context (see below). Most of coarse wares are stoves.

There is only one item of this form. It is a burial jar (KT-1249) in an inverted, pear-shaped pot with a large, open, incurving rim. The body has an inflected contour at the sides, and applied foot ring. It is 31.7 cm in height, 39 cm in diameter, and 8-12 mm in thickness.

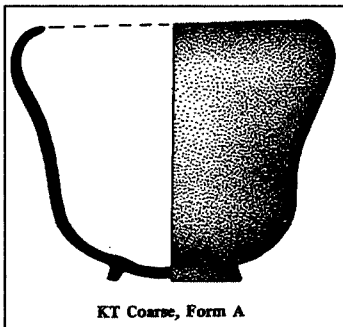

Figure App-8-10: Kay Tomas coarse wares, Form A (Main and Fox 1982, Fig. 62).

E-221 (Pulong Bakaw plain wares, Form A; PB-p-A)

Pulong Bakaw complex is remarkably recognizable in colour and paste. The wares are grey, grey-buff, or orange-buff in colour. In appearance, the ware has a roughened looked because their paste is granular, and the temper particles often protrude at the surface. Main and Fox suggest that Pulong Bakaw pottery were not locally made but imported from other locations in central Luzon (ibid.: 69).

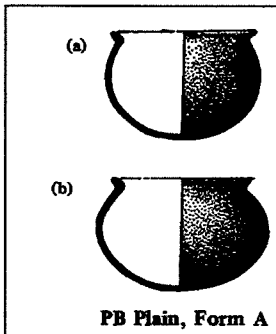

Figure App-8-11: Pulong Bakaw plain wares, Form A (Main and Fox 1982, Fig. 86).

In Main and Fox's classification (ibid: 72-77), Pulong Bakaw complex has two types of surface treatment: incised and impressed wares (PB-i), and plain wares (PB-p). PB-i wares have sophisticated decoration applied to the shoulder. However, in the original record, the only one Pulong Bakaw ware is a plain, Form A pot (KT-0026-e), and this is also the only one grave goods of this form (ibid.: 75).

E-800 (Unknown pottery complex)

Checking through original records, there are many items without information of pottery composition and surface treatment, but brief description of vessel form. Since forms of those vessels still provide useful information, especially for comparative study with trade ceramics, this research thus groups those items under E-800, unknown pottery complex.

E-801 (ordinary form, *palayok*, similar to most Form A or B)

In Main and Fox's classification (ibid.: 17), Kay Tomas slipped and polished wares Form A is the typical form resembling *palayok*, though it could refer to any pottery complex, and Form B is only different from Form A in the indentation at base. In the original record, there are many items assigned only as *palayok*, or ordinary *palayok*, or just ordinary pot, which are all included under this code for the analysis.

E-803 (ordinary form with grooves, *kinalabasa*, similar to most Form C)

In Main and Fox's classification, Form C, no matter what kind of pottery complex, always refers to earthenware pot with grooved treatment. In the original record, many items are only assigned as *kinalabasa* but without further information, and they are coded as E-803 in this research for quantitative analysis.

E-804 (pot with spout, *kendi*-like pot, similar to most Form D)

E-804 refers to any earthenware pot with spout. As explained in the section of E-114, this kind of pot is often called *kendi* in general. Although Form D is always assigned to pots with a spout in Main and Fox's classification, E-804 could be one spout or two, and also it could be any pottery complex or surface treatment.

E-808 (earthenwares in plate shaped form; similar to KT-s-J)

E-808 is a group of plate shaped earthenwares. There are seven items classified under this code which, in the original record, are either assigned as plate or dish or saucer. Though without detailed information of those items, it is reasonable to suggest that they could be the vessels of Form J of Kay Tomas slipped and polished wares (ibid.: 33-34).

E-809 (other form)

There is only one item (PP-M009-a) under this code. In the original record, it only shows that this is a bowl shaped earthenware. There are few possibilities in Main and Fox's classification, so I can only apply an independent code to this item.

E-831 (decorated *palayok*)

E-831 has only one item (KT-1207-b). It is mentioned that this is a decorated *palayok* pot. Earthenware with decoration has various possibilities in different pottery complexes. Without further information, this item can only be assigned an independent code.

E-931 (intrusive comb-incised wares, Form A)

E-931 has only one item (KT-1042-a). In the original record, it emphasises that this is an intrusive Form A pot with comb-incised decorated. In Main and Fox's

classification (ibid.: 90-92), intrusive comb-incised wares are thin-walled and well-potted pots with incised decoration around the shoulder, which is applied with pronged tool. They are a little larger, but walls are relatively thin, than the average Kay Tomas pots. Their colours are red-orange, reddish-buff or reddish-grey, and the surfaces are not slipped and polished.

Appendix Nine

Appendix Nine:
Typology of Trade Ceramics

There is no tradition of high-fired, glazed ceramics in protohistric Philippines. They were acquired through exchange, directly or indirectly, from other Asian states. To judge and diagnose trade ceramics, especially for archaeological specimen, is not an easy task, even for porcelain experts. Regarding those trade ceramics found in Calatagan, as Fox said (1959: 363), the examination was supervised by Beyer. However, in his preliminary report, Fox only gives a rough grouping based on glaze (stoneware, white ware, Blue-and-White, over glaze, etc.), form (plate, saucer, bowl, jar, jarlet, etc.), and possible provenance (South China, Thailand, or Vietnam) (Fox 1959: 363-372). It might be because Beyer never presents his classification of trade ceramics systematically. Alternatively, it is in Locsin's book (Locsin and Locsin 1967), which focuses on trade ceramics mainly found in Santa Ana, Manila, that Beyer's idea is more clearly presented in detail. On the whole, since the information of trade ceramics of Calatagan is not always available in detail, this research basically uses Fox's grouping, but cross-refers to Locsin's classification and explanation. This research then applies a 3-digit coding system the typology of trade ceramics. The first digit represents the provenance, the second digit stands for glaze, and the third digit is for the form (Table App-9-1).

The provenances of Asian ceramics encountered in Calatagan major from three areas: China, Thailand (then Siam), and Vietnam (then Annam). There might be trade ceramics from other areas, such as Khmer and Burma, or even Korea and Japan, but in very small quantity and not recorded on the list.

Glaze is the most distinctive property for most trade ceramics. It is influenced by many factors: glaze type, clay texture, paste skill, temperature, and firing technique, etc. A detailed classification for glaze type seems impossible, and it is unnecessary for Calatagan specimen because there are only few types of glaze dominated: blue-and-white wares, white or almost white glazed wares, green glazed wares or celadon, and brown glazed wares. Though there are other wares such as lead glazed and over glazed objects, they are in very small quantity.

Form is a more complicated characteristic among trade ceramics, especially compared to earthenwares. It could develop into a very sophisticated classification like Locsin and Locsin's (1967) system for the Santa Ana Manila specimen. However, for the Calatagan specimen (Fox 1959: 361), it is only available to adapt a simpler classification focuses on the ceramic forms. Table App-9-2 is simpler table for coding ceramic forms.

The following discussion introduces the typology of trade ceramics. Trade ceramics, as well as the long history of the pottery industry, of China and Mainland Southeast Asia is a huge subject, and there are many good synthesis books already (e.g., Brown, R. 1988; Guy 1986, Li 2006). This appendix only gives a brief background of the trade ceramics found in Calatagan. All of the sample pictures are Calatagan specimen shown in Fox's (1959) original report.

Provenance	Glaze	Form	
T-100			Chinese wares (C)
		T-101	Chinese bowl
		T-102	Chinese plate
		T-103	Chinese saucer
		T-109	Chinese item, other forms
	T-110		Chinese Blue-and-White ware (C-BW)
		T-111	Chinese Blue-and-White bowl
		T-112	Chinese Blue-and-White plate
		T-113	Chinese Blue-and-White saucer
		T-114	Chinese Blue-and-White jar
		T-115	Chinese Blue-and-White jarlet
		T-119	Chinese Blue-and-White others
	T-120		Chinese White/almost White ware
		T-121	Chinese White ware bowl
		T-122	Chinese White ware plate
		T-123	Chinese White ware saucer
	T-130		Chinese Celadon/Green ware
		T-131	Chinese Celadon bowl
		T-132	Chinese Celadon plate
		T-133	Chinese Celadon saucer
	T-140		Chinese Brown ware (stoneware)
		T-144	Chinese Brown ware jar
		T-145	Chinese Brown ware jarlet
	T-150		Chinese Lead-Glazed ware
	T-160		Chinese over-glazed ware
		T-162	Chinese over-glazed plate
T-200			Thai ware (T)
		T-201	Thai bowl
		T-204	Thai jar (also *gusi*)
		T-205	Thai jarlet
	T-240		Thai brown ware (stoneware)
		T-244	Thai brown jar
T-300			Vietnamese ware (V)
		T-301	Vietnamese bowl
		T-304	Vietnamese jar
T-900			Unknown provenance ware
		T-901	Bowl
		T-902	Plate
		T-903	Saucer
		T-904	Jar
		T-905	Jarlet
		T-909	Others
	T-910		Blue-and-White ware
		T-912	Blue-and-White plate
	T-920		White ware
	T-930		Celadon/Green ware
		T-931	Celadon bowl
		T-933	Celadon saucer
	T-940		Brown ware (stoneware)
		T-944	Stoneware jar
		T-945	Stoneware jarlet
	T-960		Over-glazed ware

Table App-9-1: Typology of trade ceramics.

Code	Short	Contents
Txx1	bowls	T101, T111, T121, T131, T201, T301, T301, T901, T931
Txx2	plates	T102, T112, T122, T132, T162, T902, T912
Txx3	saucers	T103, T113, T123, T903, T933
Txx4	jars	T114, T144, T204, T244, T304, T904, T944
Txx5	jarlets	T115, T145, T205, T905, T945
Txx9	Others	T109, T119, T909

Table App-9-2: Simplified form table of trade ceramics.

PROVENANCE

T-1xx (Chinese wares)

Ceramic history in China, as Rice (1987: 15) points out, "is marked by numerous technical achievements of lasting impact, particularly in the field of high-fired bodies and in glazed." Chinese wares thus are generally known both by the time, especially by the dynasties, of their making and by the region they were made. For those trade wares found in Southeast Asia, ceramics produced in south China, i.e. Changjiang (Yangtze River) drainage and south, since Tang Dynasty (618-906) were the major source.

Tang Dynasty is often seen as the most brilliant period in all Chinese history. It was not until this period that real fine-body, high-fired, and well-glazed porcelain was first produced. Also in this period, trade activities and cultural exchanges between China and foreign societies, as far as Persia and India, reached a new era during these three hundred years. Chinese ceramics were on the list of cargo for the first time, and foreign influence could be seen on Chinese ceramics (Scott, R. 2004). Most Tang wares were with white slip, and lead-glazed ceramics had appeared in various colours of green, brown, yellow, and amber. Blue-and-white wares were also first seen in this period, though in primitive technology. For the Philippines, Tang wares were found only occasionally. Ceramics in so-called Tang style are more likely to be imitated in later period.

The Five Dynasties (907-960) is a confusing time, which is after the five ruling dynasties in north China, but there were ten kingdoms in the south. Despite its unsettled society, this period saw the continuous development in pottery skill, especially the monochrome glaze. The famous Longquan wares were first produced since the late Five

Dynasties. Unfortunately, even experts rarely identify pieces belonging to this period. The succeeding Song Dynasty (960-1279), though always under military pressure from enemies to the north, pushed porcelain technology and overseas ceramic trade to another peak. The multi-chambered 'dragon kiln' was the most important technical advance, allowing large quantities to be produced in one single firing. The *Longquan* kilns were producing their best green wares in the Southern Song period, which was renowned for its jade-like, thick lustrous glaze. The white wares also underwent an important transformation during this period. There were two chief areas: Jingdezhen in Jiangxi and Dehua in Fujian. Dehua kilns were especially active in exporting trade ceramics to Southeast Asia, with advanced skills of mould-formed and mould decoration. On the other hand, underglaze painted decoration was developing at Jingdezhen kilns, which later became the famous blue-and-white wares. The Yuan Dynasty (1280-1368) of the Mongolian Empire, though it had no interest in the artistic development of ceramics, recognized and encouraged the ceramic industry as a good source of revenue. Technical advances allowed very large wares to be produced in mass production; most were destined for export. Ceramics from south China, especially green wares, came to dominate the Southeast Asian market, while blue-and-white wares began to meet demand from the Middle East during the period of time.

The Ming Dynasty (1368-1644) placed direct court control on its foreign trade after defeating the Mongols and set up a new dynasty. Although smuggling flourished, Thai and Vietnamese ceramics increased their share of the Asian trade ceramic market. Blue-and-white wares also began its rise to popularity in both domestic market and Southeast Asia. By the 15th century, the use of overglaze enamels was also practiced initially, and was being used together with underglaze blue decoration in later periods.

T-2xx (Thai wares)

Though there is a long and rich tradition of ceramic production in Thailand nowadays (Brown, R. 1977: 29-46; Higham 2002), the beginning of fine glazed ceramics for exporting is closely related to the origin of the Thai kingdom in the mid-13th century. It is also well recognized that the development of glazed ceramic production in Thailand was contributed by successive waves of migration from south China (Guy 1986: 123-9). Thai wares are generally known by the production region rather than by the period they were made. There are two major centres, Sawankhalok (Si Satchanalai) and Sukhotai, which operated at the same period between the mid-14th and the early 16th centuries.

Sawankhalok is the Ayudhya period (1351-1767) name given to Si Satchanalai and the kilns to its north on the Yom River, about 320 kilometres north of Bangkok. The Sawankhalok wares presented a wide range of glaze and form types, including many similar types to Chinese wares. Sukhothai is about 50 kilometres from the Sawankhalok kilns. The Sukhothai wares, in general, are technically inferior, and displaying limited range of ceramic types to the ceramics of Sawankhalok kilns.

T-3xx (Vietnamese wares)

Generally speaking, the history of Vietnamese glazed ceramics corresponds closely to the development of Chinese wares, though the Vietnamese identity is equally significant in the distinctive manipulation of ware forms and decorative designs (Stevenson and Guy 1997). Like the Thais, the Vietnamese also took advantage of the Chinese ban on maritime trade in early Ming, and became skilled at making trade ceramics. Monochrome wares appeared as early export wares, then blue-and-white wares dominated the Vietnamese ceramic export trade by the mid-15th century. For the

Vietnamese wares, an interesting development was the use of underglaze iron decoration (black or brown) over a slip-covered stoneware.

GLAZE

T-x1x (Blue-and-White wares)

Known in China as *Qinghua* ("blue flower decoration"), this is a type of underglaze decoration skill where cobalt blue or blackish-blue is painted on white or off-white ware body before an overall clear colourless glaze was applied. The latest shipwreck recovery (Scott, R. 2004) confirms previous suggestion that blue-and-white wares were produced as early in the 9th century in China and exported to Southeast Asia and Middle East. However, it was only until the 14th century onward that blue-and-white wares grasped their importance in Chinese local and export market. For the Chinese blue-and-white wares found in Calatagan, it is now even more clearerly confirmed that most of them are belong to kilns in Fujian and Guangdong. Thai and Vietnamese blue-and-white wares were also abundantly encountered in the Philippines. The quality of export blue-and-white wares from Fujian, Guangdong, Vietnam, and Thailand were at a low level in general, the cobalt blue colouring often appeared blackish or watery.

T-x2x (White/almost-white wares)

The white wares were first characterized as a 'northern type' tradition since the Tang Dynasty, but became extensively produced in south China from the Southern Song period onwards. The well-known *Dehua* ware, produced in Dehua region of Fujian, constitutes the large portion of white wares found in the Philippines. *Dehua* ware is a 'soft porcelain' containing high alkali content, and "...of chalky texture and creamy

glaze which was usually mould-formed and had impressed and moulded decoration" (Guy 1986: 71). Thai and Vietnamese white wares were also available in the Philippines.

T-x3x (Celadon/green wares)

Celadon and a wide range of greenish-glazed wares have colours resulting from iron and titanium oxide, fired in a reducing atmosphere. The manufacture of green wares has been dated as early as the 4th century AD, and the most famous, finest quality *Longquan* wares were produced in Zhejiang during the Southern Song period, which had thick lustrous glaze that assumes a jade-like property. However, there were a lot of imitation Longquan wares, with heavier potting and thinner glaze, produced in Fujian and Guangdong since the later Southern Song onwards, and their products were exported widely in Southeast Asia. Sawankhalok kilns of Thailand also produced *Longquan*-inspired green wares, but the glaze is thick and glassy, and colour ranges in variety due to the inconsistency of firing skill.

T-140 (Brown-glazed wares)

Wares with brown glaze, a loose classification, are a variety of coarse, grey stonewares with glazes ranging from light, golden brown to dark, brown-black, or brownish ochre and olive brown. Very often the glaze is like having a metallic sheen. The glaze frequently has been very runny, even comes way down the vessel to the bottom. Also, the glaze is often impure and makes the vessel have a mottled appearance. Of course, such speckled cover could come from the rough texture of stoneware body.

FORM

T-xx1 (bowls)

Bowls represent the most common form of trade ceramics found in Calatagan. Most bowls range between 5-7 cm in height and 13-15 cm in diameter. They are typically rounded in body with a short, straight foot-ring. One significant difference is whether the rim is everted or not. Most of bowls are covered with decoration. The most popular motifs are flowers, especially the lotus, peony, and chrysanthemum, and clouds and waves. In some cases, human and animal figures appear as well.

Figure App-9-1: Blue-and-white bowl with everted rim, the underlip design are horsemen in different actions and small flowers (Fox 1959: Plate 54).

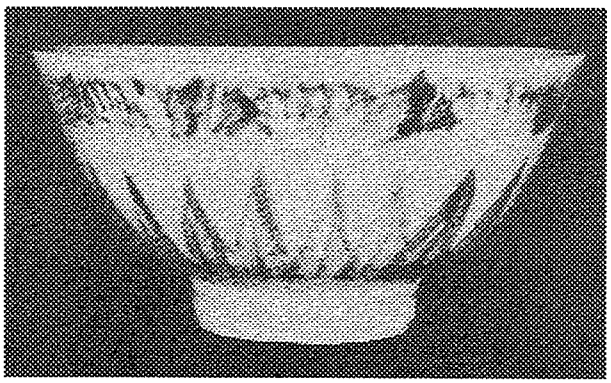

Figure App-9-2: Blue-and-white bowl without everted rim, the lotus blossoms on the bottom of the body is the most frequently encountered design in Calatagan (Fox 1959: Plate 54).

T-xx2 (plates)

Plates are the second common form among trade ceramics found in Calatagan. Plates refer to those bigger dishes, which are normally ranged 3-5 cm in height and 17-22 cm in diameter, but could be larger than 30 cm in diameter for some items. Most plates are potted with a straight rim, but very few are everted rim or even with a flattened, foliated edge. Plates usually have designs inside, in the middle and along the rim, and occasionally the outside has designs as well. The motifs are in great variations such as flowers and plates, human and animal figures, and landscape scenes.

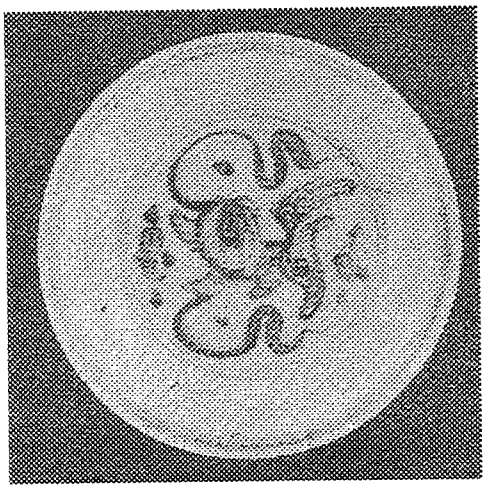

Figure App-9-3: Blue-and-white plate, a Chinese imaginary creature with streamers (Fox 1959: Plate 31).

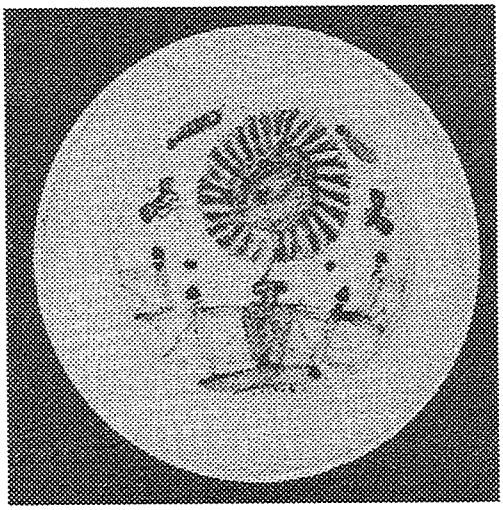

Figure App-9-4: Blue-and-white plate, "features a central scene of a fence and jar, the jar holding a large chrysanthemum, surrounded by two butterflies and clouds" (Fox 1959: Plate 35).

T-xx3 (saucers)

Saucers are smaller dishes, which normally range between 2-4 cm in height and 10-12 cm in diameter. Unlike plates, almost all saucers are potted with simple, straight rim. The decorations of saucers are usually simpler than those on the plates, but still in various motifs. Many saucers are "hole-bottom" in form, which has no footrim but a recessed glazed base surrounded by an unglazed, roughly finished ring area.

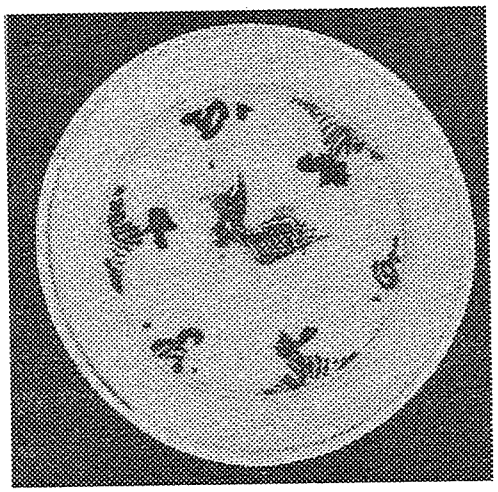

Figure App-9-5: Chinese "hole-bottom" saucer, decorated with "features raised goldfish in overglaze orange or red enamel surrounded by water plants in underglaze blue" (Fox 1959: Plate 46).

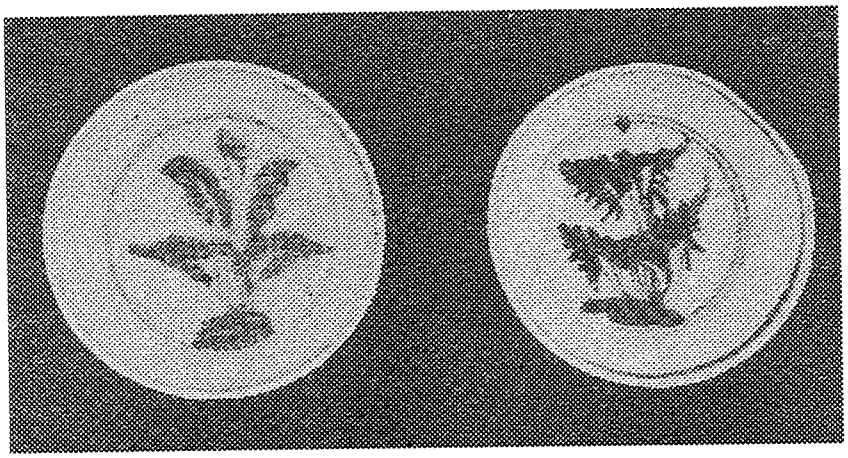

Figure App-9-6: two Chinese "hole-bottom" blue-and-white saucers, with plants design (Fox 1959: Plate 51).

T-xx4 (jars)

Jars are produced in a wide variety of shapes and sizes, which are rounded in body with a rim in various shapes. Most jars have no footrim and handle, but many have two or more ears on the shoulder. Small jars normally range between 15-20 cm in height and 15-20 cm in diameter, which are often blue-and-white or monochrome wares. Large jars are usually stonewares with partial brown glaze, and could be more than 50 cm in height.

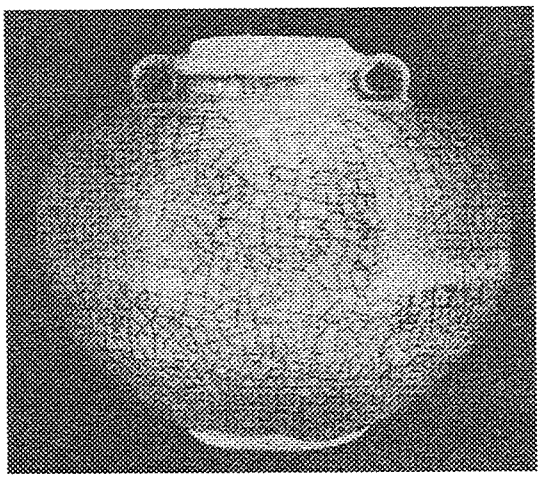

Figure App-9-7: Chinese blue-and-white jar (Fox 1959: Plate 22)

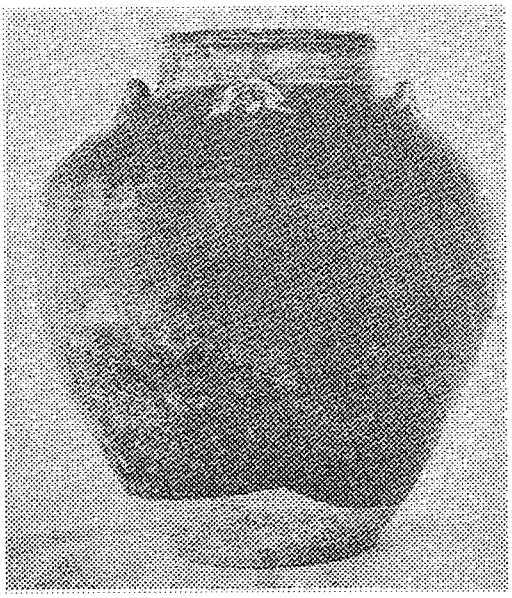

Figure App-9-8: Brown glazed stoneware jar (Fox 1959: Plate 104)

T-xx5 (jarlets)

Jarlets are jars in small size, which are generally smaller than 10 cm both in height and in diameter. Most jarlets are blue-and-white or monochrome wares with floral designs.

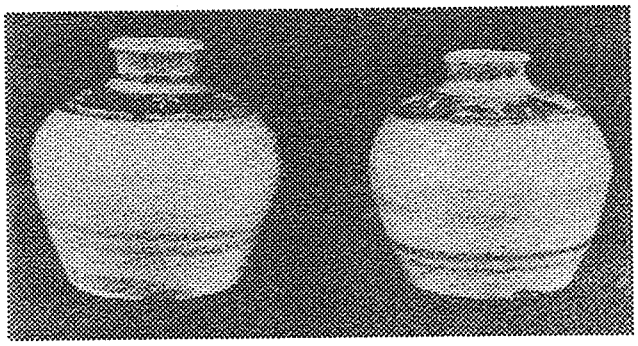

Figure App-9-9: two blue-and-white jarlets, with floral designs around the shoulders (Fox 1959: Plate 68).

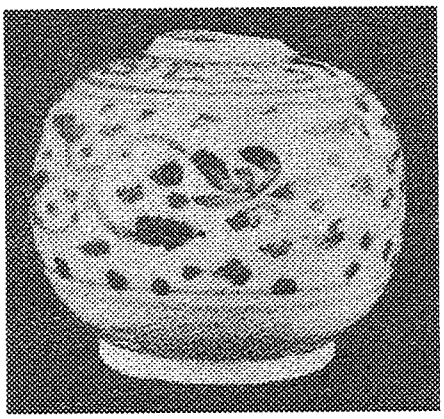

Figure App-9-10: blue-and-white jarlet, with floral designs all over the body (Fox 1959: Plate 69).

T-xx9 (others)

In addition to the five major forms discussed above, there are also many unique forms of trade ceramics found in Calatagan, though there are only a few items. Here shows the three most common types encountered in Calatagan: cup, kendi, and cover bowls.

Figure App-9-11: two cups (Fox 1959: Plate 60).

Figure App-9-12: kendi (Fox 1959: Plate 62).

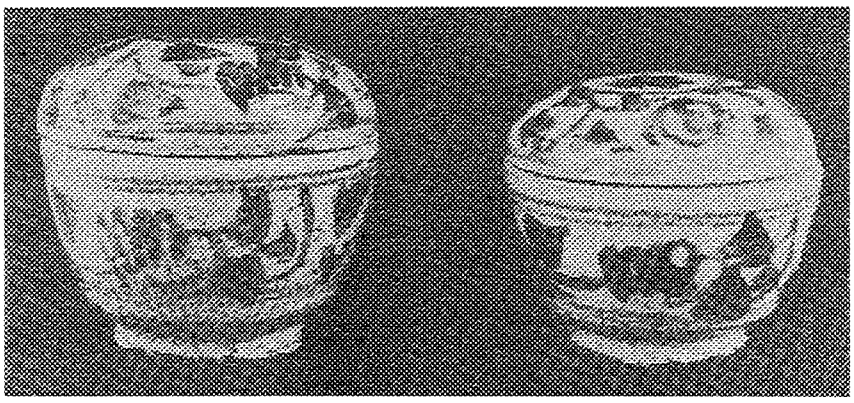

Figure App-9-13: two cover bowls (Fox 1959: Plate 65).

Appendix Ten

Appendix Ten:
Typology of Miscellaneous Grave Goods

Compared to earthenware and trade ceramic vessels, all the other kinds of grave goods only comprise few portion, less than 20% of grave goods in Calatagan. I thus grouped all those objects as miscellaneous goods. They often have only a few items but range through many kinds of materials and types. The main classification for these miscellaneous items are based on their differentiation in material: clay, metal, glass, bone, and stone. The reason is that the nature of material reflects the source of material and knowledge of technology. As we know of protohistorical Philippines in general, material source, local or foreign, and the technique knowledge, especially the know-how of dealing with metal, both imply possible inter-cultural contact and social-cultural complexity, which are important topics for this research.

This research develops a 3-digit coding system for the miscellaneous typology (Table App-10-1). The first digit is for the main material, the second for sub-group of material, and the third for specimen type. The main material includes five groups: 1 for clay, 2 for metal, 3 for glass, 4 for bone, and 5 for stone. Sub-group of material further divides the general main groups. For example, in the metal group 2, 210 is for iron objects, 220 for brass objects, 230 for copper, and 240 for gold.

The third digit is for type. Generally speaking, "0" is used for unknown type and "9" for other types. For example, 210 represents iron object without type information, and 219 exemplifies iron object with type description but not on the general list. Therefore, "1" to "8" are reserved for the most frequent objects, and this may be different between categories. For instance, "1" stands for spindle whorl in earthenwares, but for bracelet in iron object.

Material main-group	Material sub-group	Type	Specimen description
M-100			**Clay**
	M-110		Earthenware objects
		M-111	Earthenware spindle whorl
		M-112	Earthenware net weight
	M-120		Porcelain objects
M-200			**Metal**
		M-201	Metal bracelet
		M-202	Metal anklet
		M-205	Metal spear/blade
		M-208	Metal implement/tool
		M-209	Metal miscellaneous objects
	M-210		Iron
		M-211	Iron bracelet
		M-212	Iron anklet
		M-215	Iron spear/blade
		M-217	Iron slag
		M-218	Iron implement/tool
		M-219	Iron miscellaneous objects
	M-220		Brass
		M-221	Brass bracelet
		M-222	Brass anklet
		M-229	Brass miscellaneous objects
	M-230		Copper
		M-234	Copper ring
	M-240		Gold
		M-243	Gold beads
		M-245	Gold ring
		M249	Gold miscellaneous objects
	M-290		Other metal objects
		M291	Chinese coin
M-300			**Glass**
		M-301	Glass bracelet
		M-302	Glass anklet
		M-303	Glass beads
		M-307	Glass slag
M-400			**Bone**
	M-410		Land animal bone
	M-420		Fish bone
	M-430		Shell
		M431	Shell bracelet
M-500			**Stone**
	M-510		Stone (non-artificial object)
		M-511	Stone figure
		M-512	Stone implement/tool
		M-519	Stone miscellaneous or unknown objects
	M-520		Carnelian
		M-523	Carnelian beads
M-900			Other unknown material objects
		M-901	Bracelet
		M-903	Beads

Table App-10-1: Typological coding of miscellaneous grave goods

M-100 (Clay object)

Clay objects, especially earthenware spindle whorls and net weights, comprise the majority of all miscellaneous grave goods. According to Main and Fox's (1982: 57-61) classification of earthenwares, all of spindle whorls and net weights are under the type of Kay Tomas coarse pottery (Figure App-10-1). Most spindle whorls range between 1.5-2.0 cm in height and 3-4 cm in diameter, and net weights range between 3-4 cm in height and 2-3 cm in diameter. Compared to spindle whorls, net weights found in the graves are few, though they are often found in the middens and habitation area.

Regarding to porcelain objects, though most are vessels as discussed in the Appendix Eight, there are a few items of non-container objects, like lids or broken parts of another object.

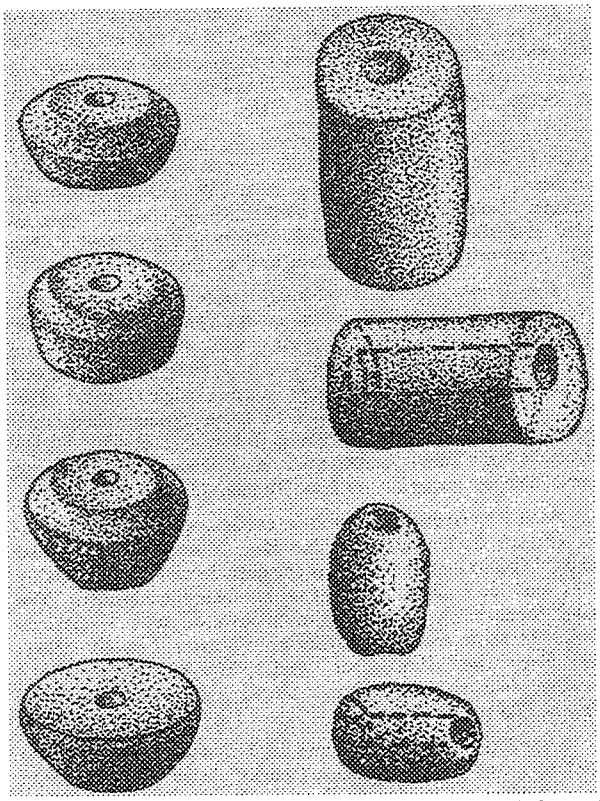

Figure App-10-1: earthenware spindle whorls (left) and net weights (right) (Fox 1959: plate 10).

M-200 (Metal object)

Metal objects are comprised of various kinds of materials including iron, brass, copper, and gold. In terms of metal objects and metallurgy in the pre-Hispanic Philippines, unlike earlier presumption of "Iron Age" (Beyer 1947; Solheim 1964), later studies (Dizon 1990; Hutterer 1977) suggested that there were "iron-using" societies in protohistoric Philippines as early as in the late first millennium BC. It is supposed that iron, as well as other metal and "precious" objects such as gold, bronze, glass and carnelian beads, may have been of foreign manufacture. However the idea of iron objects of potentially foreign origin does not ignore the existence of know-how of maintaining iron implements, such as blacksmithing, forging, and recycling of iron materials, in protohistorical Philippine societies. On the contrary, latest archaeometallurgical study suggests that there was "an improvement in iron technology through time...a small scale wrought iron production at the level of local smith and by a number of them spread over the entire Philippine archipelago, each evolving his own local techniques to meet the domestic needs and design preferences of the inhabitants" (Dizon 1990: 60).

Regarding metal object types, metal bracelet/anklet and spear/blade are the most common objects (Figure App-10-2 and App-10-3). Blades of spears are made of iron and brass. Their forms are described as "generally like the blade of a rice leaf and are forms which have been common on Luzon and are still known to the Tagalog in the Magallanes area of Cavite and Batangas" (Fox 1959: 358). Bracelets and anklets are mostly brass, but iron items are found as well. There are metal parts of chests including lock, handles (Figure App-10-4).

In addition, few gold objects (Figure App-10-7, H) are also found, including gold leaf ornaments and a finger made of an alloy of gold/silver/copper.

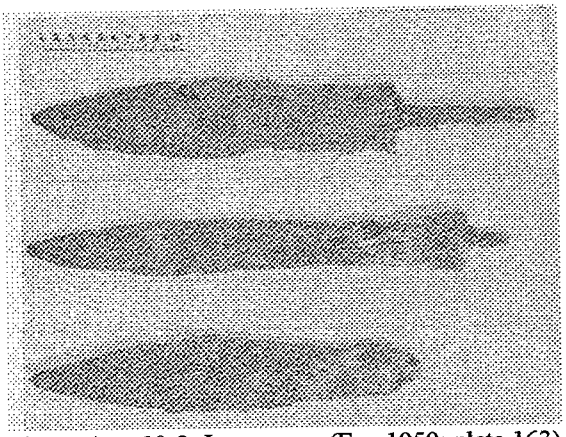

Figure App-10-2: Iron spears (Fox 1959: plate 163)

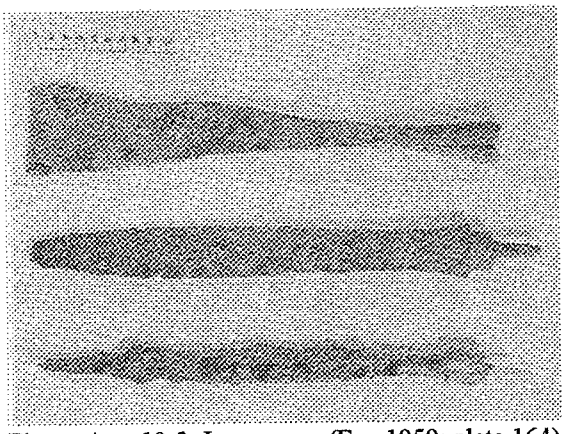

Figure App-10-3: Iron spears (Fox 1959: plate 164)

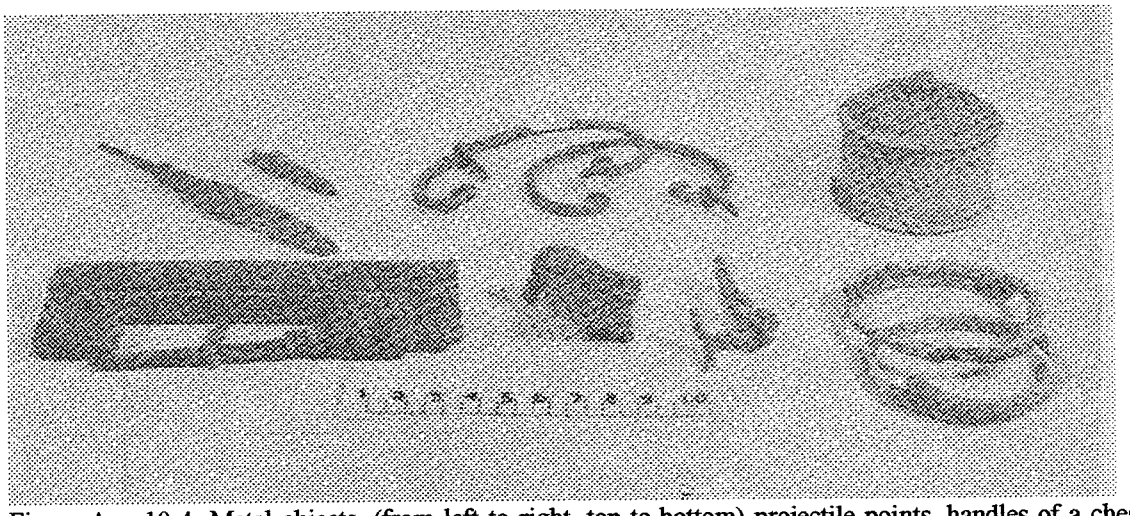

Figure App-10-4: Metal objects, (from left to right, top to bottom) projectile points, handles of a chest containing lime, lock, hinge of chest, and bracelets (Fox 1959: plate 162).

M-300 (Glass objects)

Glass objects, according to glass beads analyzed by Francis (2002: 201-220), found in the pre-Hispanic Philippines come from various sources: Southeast Asia, India, China, Middle East and even Europe. It is not clear yet whether the Philippines at that time already had their own glass industry, but glass items were on the cargo list around the 16th century.

In terms of forms, glass is either bead or bracelet/anklet. Glass bracelets are more common than anklets (Figure App-10-7). According to Fox's report (1959: 357), there are two types of glass bracelets encountered, at least in Kay Tomas and Pulong Bakaw, "One is made of translucent green glass which Professor Beyer identified as Filipino-made. The other is made of an opaque, blue or green, glass paste, and this type probably came from Indo-China." Glass beads are more unusual than bracelet/anklet, and they seemed to be sewn to a fabric, according to Fox' observation (ibid.).

M-400 (Bone objects)

There is no artificial object made of animal bone. Those bone objects are actually animal remains. According to Fox's observation (1959: 355), shells and bones of fish and animals are frequently encountered in grave. They are often found in earthenware vessels. In some cases, shells are scattered all over the grave. In a few instances, pig or deer bones are found lying beside the human skeleton, or giant clam (*Tridacna gigas*) are used as a kind of 'grave marker' (Figure App-10-5) (ibid.: 342).

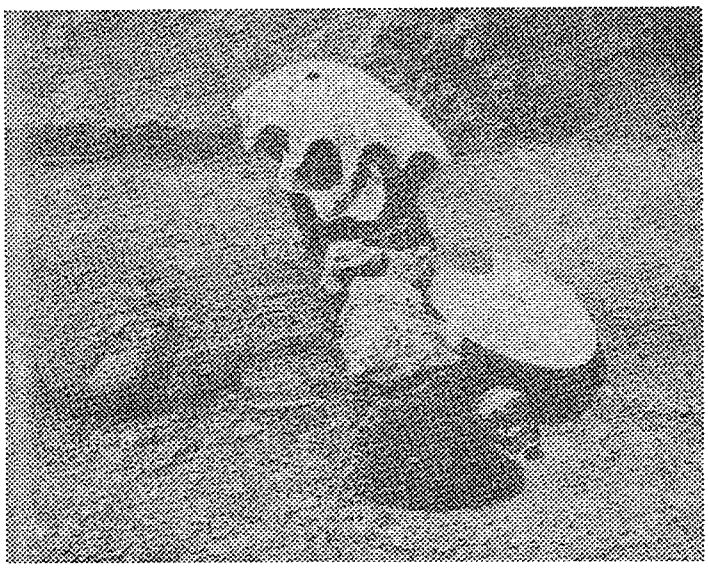

Figure App-10-5: giant clam as 'grave marker' (Fox 1959: plate 4).

M-500 (Stone objects)

Stone objects include local rocks and imported precious stones such as carnelian. Most of local rocks are chunks of brain-coral. In some instances, they are placed near the surface of the grave, often above the position of chest, and with a clear intention to be as certain kind of 'grave marker.' In a very few cases, stone figures are found, which could be seen as crude figure of human (Figure App-10-6).

Carnelian and other exotic stones, such as rock-crystal, jade or nephrite, are few and often in form of bead (Figure App-10-7). Like their counterpart in glass, they are usually sewn to a fabric or are worn around the neck, wrist, and ankles.

Figure App-10-6: stone figure found at Punta Buaya (Fox 1959: plate 165)

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Appendix Eleven

Appendix Eleven
Brief of site description and mortuary database of Pila, Laguna, SW Luzon

The site is located at the barrio of Pinagbayanan, Municipality of Pila, Laguna Province, just on the south coast of Laguna de Bay, a large lake around 70 kilomitres southeast to Manila (see Figure 6-1).

Laguna lake area, due to its location and environment, has long been pointed for its archaeological potentiality (Beyer 1947: 250-1). However, no systematic work was done here until the Locsin – University of San Carlos joint project in late 1960's. Even though this joint project was sponsored by Mr. and Mrs. Locsin, a rich couple and antique collector, the excavation was carried out by a trained anthropologist, Mrs (later Dr.) Rosa Tenazas, from University of San Carlos in Cebu, resulting in a publication (Tenazas 1968) that accounted finds and digging method as well. In the appendix of her report, Tenazas gave more detailed descriptions to each grave, following Locsin's system to classify trade ceramics. She listed all types of ceramics and numbers for each grave. A distribution map which is followed in grid system also gave us burial information (unfortunately without head orientation). She even identified four periods which were based on stratification and finds.

Archaeologist excavated three localities (or sites according to author of site report): Agra, Mendoza No.1 and 2 (see Figure 6-1). They are all very near to each other. Unfortunately, data from the third and smallest locality, Mendoza No.2, is not available in this report. There are totally 2,720 sq. metres excavated in two localities, containing 170 squares of 4×4 m^2 and 241 burials representing 4 cultural periods.

Pila site is a well-recorded stratified site . There are six stratas with four cultural levels here . From the top, the first stratum is a thin layer (less than 10 cm) of light brown soil which is occasionally interrupted by modern agricultural activity.

The second stratum, and cultural level Period IV, is a about 10 cm layer of compact, fine-grained, grayish-brown clay soil. There is no cultural remains here but 9 burials (3 in locality I and 6 in II) found in the same depth of the fourth stratum must have originated from this level. These burials are often pointed out by their appearance of darker patches on the reddish-brown surface of the fourth stratum.

9 graves	Trade Ceramics	Earthenwares	miscellaneous	Sum
with/without goods	9/0	1/8	4/5	9/0
sum	28	1	4	33
mean	3.11	0.11	0.44	3.67
S.D. (in 95%)	2.93	0.33	0.53	3.24

Table App-11-1: Categories of grave goods in period 4 cemetery of Pila, Laguna

The third stratum is an important cultural level (Period III). It is at 15-20 cm under the modern surface, and about 45 cm in thickness (this varies at two localities), which is characterized by relatively soft black loam, rich in organic material. A sizeable quantity of cultural remains (i.e. sherds of earthenware pots, net sinkers, spindle whorls, iron slag, etc.) and 55 burials, as well as animal remains (pig, horse, and cow) and structural remains of postholes and pits are recovered from this level. Considering such rich remains, it is postulated to have been utilized as habitation as well as burial site.

According to archaeologist's observation, burials from this layer comprises of a new burial practice with the appearance of cremation. Of the total 55 burials uncovered, there are 33 could be definitely confirmed as cremation, and another 17 seemed quite possible as cremation as well. There are two types of burials for these 50 cremations: 38

cases are in jar containers (3 in earthenwares and 35 in stonewares or porcelain), 12 instances are in pit directly.

There is one radiocarbon dating from this period: a sample of bone dated 1375±25 B.P (Tenazas 1968: 14).

55 graves	Trade Ceramics	Earthenwares	miscellaneous
with/without goods	42/13	4/51	1/54
sum	73	5	1
mean	1.46	0.10	0.02
S.D.	2.56	0.05	0.02

Table App-11-2: Categories of grave goods in period 3 cemetery of Pila, Laguna

The fourth layer has a thickness of about 85 cm, characterized by medium-grained, reddish-brown, sandy clay. This Period II in the three cultural levels is the densest in burials (174 in total) but cultural remains are not so rich as in the upper level Three.

174 are all believed to be inhumation. However, there are only few cases where traces of skeletal remains were recovered. But there appears to be a preference for the north/northeast direction of orientation.

174 graves	Trade Ceramics	Earthenwares	miscellaneous	sum
with/without goods	150/24	60/114	42/132	167/7
sum	626	81	71	778
mean	3.60	0.47	0.41	4.47
S.D. (in 95%)	3.48	0.77	1.12	4.49

Table App-11-3: Categories of grave goods in period 2 cemetery of Pila, Laguna

The fifth is a layer of compact, fine-grained sandy clay. This is recognised as the Period I in the three cultural levels because of the three burials that are encountered (all found in locality 2, e.g. D. Mendoza #1) from this level. These three are located not too far below the lowest burial of upper level. However, there is no trace of skeletal remain

for these three burials, with only four earthenwares recovered. These four earthenware pots are very different in size, form and decoration from those encountered in upper levels. There is no trade ceramics here as well. Due to these facts, the author set this level as just prior to trade contacts with China, probably near the end of the first millennium AD or a little earlier, which is attributed an Iron Age date.

The last, sixth stratum is sterile natural soil which is under water table.

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